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ABSTRACT

This doctoral dissertation presents and demonstrates an inductive model used in the Albemarle Region (State Planning Region R), a 10-county area of North Carolina, for determining health occupations education needs and resources. Data were collected from over 1200 area health personnel utilizing three basic types of instruments which were developed specifically for the study: One for each of several health agencies, one for health professionals, and one for health workers. Information sought included the identification of health education programs and resources (both current and planned), the identification of perceived manpower shortages in health fields, and the identification of perceived inservice and continuing health education needs of health professionals and other health workers according to an established priority. Although the data analyses involved only the health education needs of the Albermarle Region, implications are given for applications of the procedure for determining educational needs in other occupational areas. Appendixes include background information on area health education systems, analysis of the reported needs, and copies of seven instruments which were employed during the study. (DE)

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AN INDUCTIVE METHOD OF HEALTH EDUCATION NEEDS ASSESSMENT

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ABSTRACT

PORTER, GORDON WILLIAM. Development and Demonstration of an Inductive Method of Health Education Needs Assessment in a Geographic Area of North Carolina. (Under the direction of JOHN K. COSTER and ROBERT L. MORGAN).

Modern approaches to planning typically suggest that the planning be based on an assessment of current needs and resources. A generic planning model illustrative of this principle has been included. Within the context of the generic model, one method of assessing area health education needs and resources was demonstrated. The method produced primary data for the rural area under consideration and is termed inductive because it provides for goals and objectives to be determined subsequent to, and on the basis of, an analysis of the current state. In deductive models, goals and objectives are set initially; then needs and resources are assessed.

The procedure for resource and needs assessment utilized a survey approach consisting of the following steps: design, instrument development, location of potential respondents, data collection, and data analysis. On the basis of the data analysis, the health education needs and resources of a selected region were determined. Information sought included the identification of health education programs and resources, both current and planned; the identification of perceived manpower shortages in health fields; and the identification of perceived inservice/continuing health education needs of health professionals and other health workers according to priority.

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The study stressed production, analysis, and presentation of primary data through target group involvement in such a way as to be of immediate, practical usefulness to planners and decision-makers in setting goals and objectives for a particular Area Health Education System. The inductive method was implemented in the Albemarle Region (State Planning Region R) consisting of ten contiguous counties in extreme northeastern North Carolina. Implications for other applications of the procedure for determining education needs in other occupational areas were given.

DEVELOPMENT AND DEMONSTRATION OF AN INDUCTIVE METHOD OF HEALTH EDUCATION NEEDS ASSESSMENT IN A GEOGRAPHIC AREA OF NORTH CAROLINA

by

GORDON WILLIAM PORTER

A thesis submitted to the Graduate Faculty of
North Carolina State University at Raleigh
in partial fulfillment of the
requirements for the Degree of
Doctor of Education

DEPARTMENT OF OCCUPATIONAL EDUCATION

RALEIGH

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APPROVED BY:

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BIOGRAPHY

Gordon William Porter was born March 22, 1937, in Damariscotta, Maine. He received his elementary and secondary education in the public schools of North Newcastle and Kennebunk, Maine, graduating from Kennebunk High School in 1954.

He received the Bachelor of Science degree with a major in education from Gorham State College (Maine) in 1958. From that time until June, 1962, when he received the Master of Education degree from the University of Maine with a major in guidance and counseling, he served as a teacher in two Maine high schools. In 1962 he was appointed Director of Guidance at Thomaston and Rockport High Schools (Maine). The following year, several smaller high schools in the area, including Thomaston, were replaced by Georges Valley Area High School, Thomaston, Maine, where he not only continued to serve as Guidance Director but subsequently as Director of Adult Basic Education and Assistant Director of Adult Education, concurrently.

In early 1970 he became Vocational Guidance Consultant for the New Hampshire State Department of Education, a position held until he received an EPDA Leadership Development Fellowship for doctoral study at North Carolina State University in the summer of 1971. While at North Carolina State University, he has been a graduate research assistant at the Center for Occupational Education and a research analyst at The Institute of Human Ecology (now The Human Ecology Institute) where he completed his internship. From October, 1973, until the present, he

has served on the faculty of North Carolina State University as a research assistant at the Center for Occupational Education.

The author is married to the former Diane Holmes. They have two daughters, Lisa and Bethany, and a son, Geoffrey.

ACKNOWLEDGEMENTS

A study of this nature is never the work of one person. The author wishes to express his appreciation to the members of his doctoral committee: Dr. Jerome B. Hallan, whose continuous guidance and support through both the design and implementation phases of the project was a major factor in its completion; Dr. Joseph R. Clary and Co-Chairman Dr. Robert L. Morgan, whose individual and collective commitments of interest, time and expertise were invaluable; and especially Co-Chairman Dr. John K. Coster, for his availability and concern.

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Had it not been for the cooperation of several hundred Albemarle Area health workers, scores of physicians and other health professionals, and the administrators of the various social and health agencies and educational institutions studied, this project could not have been conducted. Others who have made significant contributions in the areas of technical assistance, data reduction and analysis, and editorial and typing services include William Schlenger, Jay Levinsohn, Bobbie Sides, Millie Donavant, and Sue King.

Finally, genuine appreciation is expressed, for her patience and understanding, to Diane, who has suffered countless evenings and

weekends with an absente husband, and to Lisa, Beth and Geoff, who have suffered similarly with an absentee father.

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CHAPTER I

INTRODUCTION TO THE STUDY

Problem Statement

The general problem to which the present study was addressed is the methodological gap between theory and practice in educational planning:

> . . . a great deal of theoretical literature has been written on the topic of organizational planning in general, and on the topic of educational planning in particular. There appears to be a very wide gap between (1) how the literature describes planning might be done; and (2) how the planning function is actually or realistically could be carried out in an organization. (Miklos et al., 1972)

Nowhere is the gap more evident than in the subset of planning known as needs assessment. A central component of virtually all theoretical planning models (often the first step), needs assessment is frequently overlooked by planning practitioners (Borgen and Davis, 1971), who seem unable to translate the models into practical guides for local action. This situation has prompted Kurth (1971) to conclude that

> . . . there is little question that this most critical component of planning and decision-making has over the years largely been left to the somewhat capricious whims of intuition and educational guessmanship.

Thus, the specific problem addressed by the study was the lack of a design for conducting a needs assessment based on contemporary planning theory, yet of sufficient conceptual simplicity as to be readily implementable by planning practitioners. A method for the collection of primary data on area needs and resources useful to local planners in establishing program goals and objectives appeared desirable.

Need for the Study

The specific problem has its roots in legislation and various administrative directives which have resulted in the new concept of Area Health Education Systems (AHES). Pursuant to the enactment of Public Law 89-239 (the heart disease, cancer and stroke amendments to the Public Health Act) and Public Law 91-515 (kidney and related disease amendments), the Regional Medical Programs Service (RMPS) was established within the Health Services and Mental Health Administration of the U. S. Department of Health, Education and Welfare. Concurrently, 56 state-level Regional Medical Programs, among them the North Carolina Regional Medical Program (NCRMP), came into existence. In the spring of 1972, the NCRMP Regional Advisory Group developed four broad goals, each subsuming a number of objectives for the North Carolina Regional Medical Program which were both consistent with the guidelines and directive of RMPS and considered appropriate for North Carolina.

One of these goals involved the assistance in "the development, efficient utilization and optimum distribution of qualified health care personnel throughout the state, with special attention to under-served areas, both rural and urban" (NCRMP, 1973). Specific objectives associated with this goal included the support of "systematic health manpower needs assessments so that priorities may be established in the areas of manpower development, utilization and distribution"; the support of area-wide cooperative efforts between educational institutions and health care providers; the promotion of the distribution of health manpower in accordance with identified needs; and the promotion and

support of more effective educational methods and techniques in retraining or improving existing health care personnel.

In order to ensure that the goals and intent of the AHES concept would be systematically realized, NCRMP developed Guidelines on Area Health Education Systems for use by local areas within the state in developing proposals for potential AHES's. Among the operational criteria stipulated in the guidelines were (1) the location of resources for both basic and continuing health education, (2) the determination of continuing education needs for all categories of health professionals, and (3) the establishment of clearly defined goals and objectives based on the needs of the area to be served.

The NCRMP Guidelines, however, did not provide a method for planners to use in meeting the operational criteria. The failure to include the methodology in the guidelines is not surprising, given the theoretical orientation of much of the planning literature. While there is considerable literature on the use of information in health planning, on manpower forecasting, and on systems approaches to planning the needs assessment, much of it sheds more light on the problems involved in attempting to use data in needs assessment and planning than on the solutions. Despite the proliferation of systems-based theoretical planning models, no direct method of ascertaining primary data, in a form immediately useful to planners, on the education and training needs of health manpower for a given area appears to be extant.

The inability to obtain information for assessing current, intermediate and long-range manpower training needs has seriously limited health planning. According to Kassel's (1971) study of the need for

physicians' assistants in the metropolitan Chicago area:

> Current labor market information, including occupational studies and forecasts, is incomplete and too general to assist the State, local governments and health related agencies in developing sound plans.

Further, Kassel (1971) concluded that ". . . models for effective health manpower planning within the framework of overall health care planning are still undeveloped."

While various reasons for this lack of development have been advanced (Hallan, 1971), it is apparent that systems-based theoretical models already exist which can be adapted to ameliorate manpower problems, not only in health education, but in other areas as well. (See Planning Models, Chapter II, p. 9.) The difficulties in the operational applications of these planning models stem not from a lack of theory, but from a lack of information of usable form and content for planners and decision-makers. Models are constrained by the quality of information available for input. Community health education needs are frequently derived indirectly through interpolation of national and state trend data and through examination of demographic information, mortality and morbidity figures, and other secondary information. These data are collected by different agencies for various purposes and may be only marginally relevant to health education planning.

Thus, local planners of programs of occupational education are faced with a bifurcate problem in translation: (1) that of translating theoretical planning models into viable guides for local action and (2) that of translating vast quantities of general and often inappropriate data into estimates of specific community needs. Thus, many needs

assessment studies in occupational education consist of vast compilations of demographic and other statistics which administrators and planners are, for the most part, unable to translate or relate to specific manpower needs.

The present project represented an attempt to alleviate this translation problem within the context of the Guidelines supplied by the North Carolina Regional Medical Program (NCRMP). Thus, the need for the study stemmed from theoretical considerations, but its implementation was the result of the very practical situation of response to a legislative mandate as interpreted by NCRMP.

Purpose and Objectives

The overall purpose of the project was the development and implementation, based on planning theory, of a practical design for the collection of primary data on health resources and educational needs. Implementation of the design provided data of immediate utility to planners in establishing goals, objectives, and priorities for health education generally and for Area Health Education Systems specifically.

The study had three specific objectives:

1. To develop, consonant with planning theory, a methodology and accompanying instruments for assessing health education needs in a given geographic area.
2. To determine health education needs and identify health education resources in a given geographic area through primary data produced by the methodology.

3. To relate the implications of the method of needs assessment developed to other areas of occupational education.

Scope of the Study

This study envisioned needs assessment as only one step in the total planning process. It was directed at the first phase of planning which has as its purpose the provision of information about the current state and about possible desired states. With such data, decision-makers with access to other available information (e.g., in health education planning, demographic data, mortality statistics, morbidity figures, etc.) can determine an appropriate desired state and formulate goals and objectives for attaining it. This planning process purpose is realized in the generic planning model (Chapter II, p. 10) through the conduct of a position audit and a needs assessment.

Position audits, sometimes called status studies or resource assessments, concentrate on the location and description of existing facilities, services and resources. Needs assessments, when defined separate from position audits (as in the generic planning model), refer to the process by which individual needs (generally of people or groups of people) are identified, aggregated, analyzed and presented. Since position audits and needs assessments are nearly always performed concurrently, however, the combined process of assessing both needs and resources has come under the general rubric of "needs assessment" in common usage. The state of the art of definitions of needs assessment is treated more thoroughly in Chapter II.

The present study followed common usage in that needs and resources were not assessed in separate steps or phases. That is, the term "needs assessment" includes throughout the dissertation (except of course, with reference to the generic planning model) the assessment of both needs and resources. Because of less than universal agreement on the meaning of the term and in order to prevent possible misunderstandings, an operational definition was constructed. Thus, for the purposes of the present study, health education needs assessment was operationally defined as the process by which the following four areas were delineated for a particular locale:

a. Existing health facilities, services and resources.
b. Perceived preservice and inservice/continuing education needs of health workers and health professionals.
c. Perceived manpower shortages (by health workers and health professionals).
d. Existing and potential coordination activities between health agencies and among health agencies and other agencies.

For each of the areas above, information was gathered of sufficient quality and quantity to serve as a basis for the development of goals and objectives as a step in the planning of an area health education system. The study design indicated that every health or health-related agency, public or private, providing direct health care or health education in the area of concern be located for survey participation. In order to assess facilities, resources, and needs separate questionnaires or structured interview guides were developed for hospitals, public health agencies, mental health agencies, social

service agencies and educational institutions. A separate questionnaire was also developed for individuals practicing direct professional health care services (physicians, surgeons, etc.). Finally, an instrument was designed for all individuals employed in health agencies excluding those defined as professionals and those serving as agency heads.

Utilizing these instruments, data were collected in State Planning Region "R," otherwise known as the Albemarle Area. Consisting of ten contiguous counties in extreme northeastern North Carolina, the Albemarle Area was one of eight North Carolina regions selected at various times for Area Health Education System development. Presently, the Albemarle Area Health Education System is one of two which have been established and are functioning under North Carolina Regional Medical Program auspices. The data were analyzed and organized into a report which served as a basis for planning of the Albemarle Area Health Education System with regard to the four areas indicated previously.

The availability of a practical method of needs and resource assessment can facilitate planning. Data gathered by the method might obviate the need for local vocational and occupational education planners to gather their own data on a single institution basis preparatory to the development of health education programs. Since resource and need data for an entire planning region would presumably be on file at the Area Health Education System office, the potential would exist for the elimination of a major stumbling block to effective planning.

CHAPTER II

REVIEW OF LITERATURE

The purposes of this section are (1) to provide a context for the study through consideration of selected literature and (2) to attempt to establish a relationship between planning theory and the activities and objectives of the study. Since much of the literature on needs assessment is to be found under the broader heading of planning, it seems appropriate to begin there.

Planning Models

The literature is replete with systems models upon which the planning process can be based. Tempkin (1970), in his evaluation of the "comprehensive" (systems-based) planning literature, specifically made reference to its vastness. In the first part of his review, a number of planning models were discussed and evaluated. He concluded with an extensive, five-section bibliography, which illustrates the prodigiousness of the literature. Further, Tempkin is only one of many writers who in the past five years have developed planning models, reviewed them, and/or developed bibliographies. Others relating specifically to education include Alger's (1972) model for planning area vocational education programs, Correa and Adam's (1972) model for studying educational planning, Doob's (1973) model for simulation and gaming in health education, Fincher's (1972) collection of models and paradigms in higher education, and McNamara's (1971) regional occupational education planning model. Leggett and Binning (1971) alone discuss 14 designs for institutional

planning. Approaches specifically identified as systems models have been offered by Hawes (1969), Jamison and McLeod-Guertin (1969), Latta and Papay (1971), and McNamara et al. (1971), to name only a few. Piele (1969) reviewed 16 literature reviews dealing with planning systems and planning models in education. Hinds (1969) compiled a 97-entry annotated bibliography on educational program planning; similar bibliographical efforts have been completed by Oregon State University (1971) on models for planning for DHEW and by the Organisation for Economic Co-operation and Development (OECD) (1972) on systems analysis for educational planning.

Scores of these models, when reduced to their simplest terms, suggest that planning is at least a three-stage effort which would seek to answer such questions as "Where are we now?"; "Where do we want to go?"; and "How do we expect to get there?" Stated somewhat more formally, planning is an iterative process involving an assessment of the current state (including an assessment of needed products or services as well as those currently available), a formulation of the desired state (based on the identified needs), and, finally, the allocation of resources to optimize the attainment of those goals and objectives. As resources are expended during implementation, changes in the current state are documented through evaluation and provide feedback for the next planning cycle.

Generic Planning Model

A generic planning model, typical of many found in the literature and illustrative of the conception of planning outlined above, is included here as Figure 1. While some researchers arrange the steps in

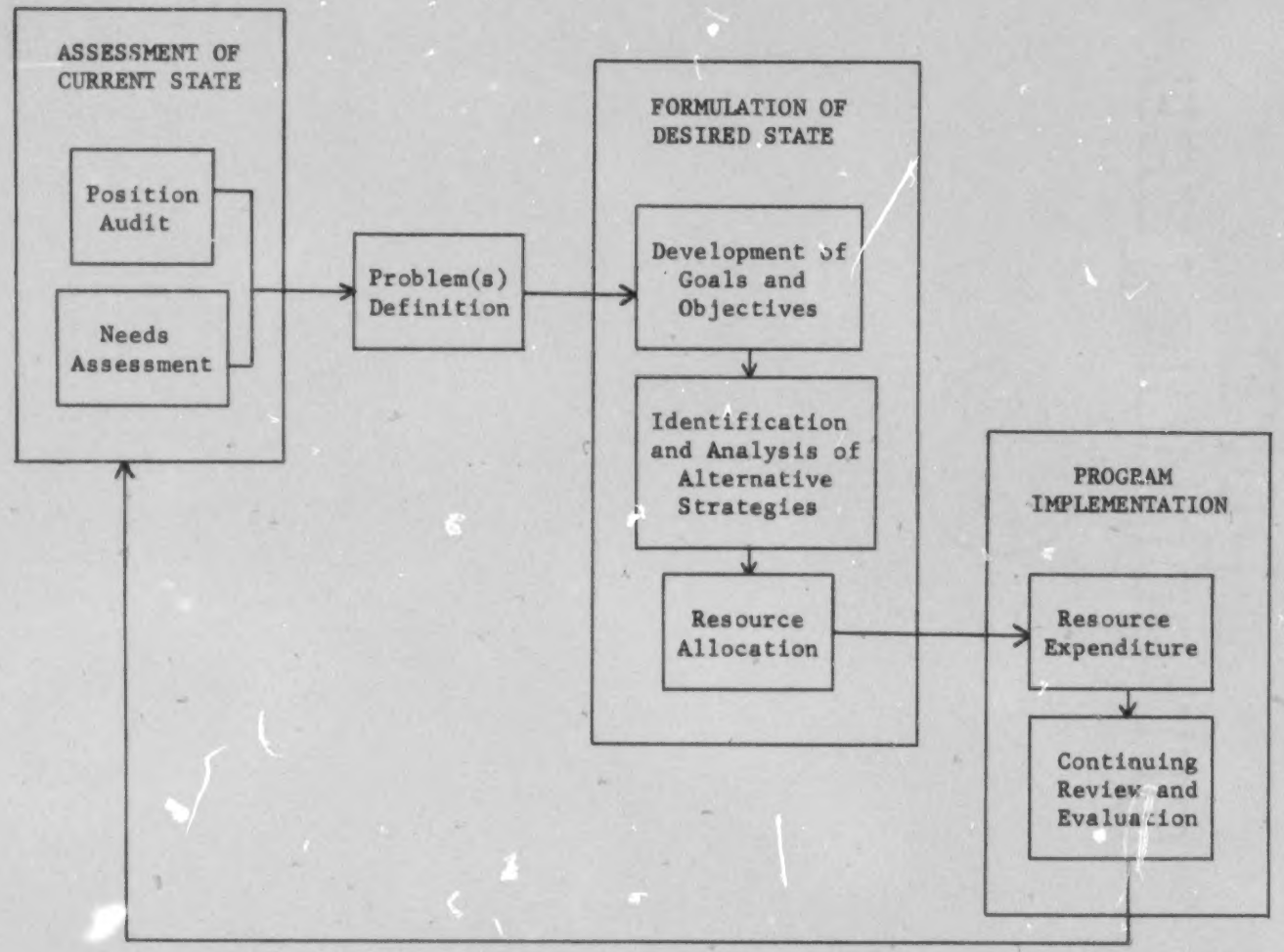

Figure 1. A Generic Planning Model (Inductive)

slightly different ways,[1] add or delete a few steps or use different euphemisms (a position audit is sometimes called a status study; needs assessment may be called discrepancy analysis or need validation, etc.), the basic process described is essentially similar.

Status of Planning in Occupational Education

The large quantity and apparent sophistication of the theoretical planning literature does not, as might be expected, reflect the state-of-the-art of actual planning, however. Miklos (1972), quoted earlier in this paper, has considered the lack of congruence between the planning models described in the literature and actual planning behavior in organizations. The wide gap between theory and practice that he and others have identified constitutes the problem to which the present study is addressed.

To say that there is ample justification for his charge is an under-statement; study after study could be cited to support it. Typical of such studies is one by Borgen and Davis (1971) on decision-making practices in Illinois junior colleges. Borgen and Davis found that only slightly more than half of the junior colleges surveyed had conducted any kind of manpower survey preparatory to the establishment of new occupational programs; that only ten percent determined potential

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[1]Some models require establishment of the desired state first, then the assessment of the current state, followed by a documentation of the discrepancies between the two, and the development of strategies for alleviating the discrepancies. Such models are termed deductive (Kaufman, 1972). The more traditional inductive approach is utilized in the present study and shown in Figure 1. In this approach the desired state is not formulated until the current state has been assessed.

target populations, even fewer considered student needs, and none utilized job analysis surveys; that only four percent followed up dropouts; and that only 31 percent followed up graduates. In the Illinois study, the most common method used by junior college personnel to determine courses to include in their new programs (utilized by 71 percent of the junior colleges surveyed) was the examination or review of programs in other institutions. Advisory councils were the most common vehicle used to relate programs to community needs (utilized in each phase of planning by more than three-quarters of the institutions surveyed), yet in most cases the councils were required to make judgments on the basis of feelings because factual survey data had not been made available to them by the institutions. Few of the institutions studied utilized community organizations, industrial relations committees, union and management organizations or interested parents. In fact, most decisions relating to program identification and development were made by occupational deans.

Miklos (1972) postulated several reasons for the gap between theory and practice. Among them are a failure of organizations to recognize the importance of planning, and more likely, a failure on the part of the theoreticians to make their models relevant to the organizational needs of the practitioners. One could as easily blame the practitioners for their failure to assimilate the theories and adapt them to local situations. Bergen and Davis (1971) seem to favor this view. School administrators indicated in the Illinois study that they lacked the time, resources and expertise to perform surveys and/or gather and analyze data. Bergen and Davis further discovered that the willingness of curriculum planners to rely heavily on what is done in

other institutions is, in most instances, due to a lack of a systematic planning process (not theory) to gather local data for use in program development.

If local data are difficult to generate, why can't local planners translate the available demographic and manpower information produced by federal and state agencies into estimates of community needs? Smith (1973), in a paper on planning for health manpower data in Oklahoma, stated flatly:

> Data gathered at the national level represent sampling techniques which are not accurate enough for local needs and are often out of date by the time they are in print. State professional associations and licensure agencies may have excellent current data, but value to planners is limited because the data are prepared from the standpoint of particular professional groups. Identification of a single state agency which has sustained capability and responsibility for development of comprehensive health manpower information is generally elusive, and possibly, less desirable than it might seem.

One promising effort toward the integration and quantification of information on human stocks and flows with regard to learning and earning activities is that of Stone (1972). Called "demographic accounting," the system applies accounting theory to human flows assuming that they are somewhat analogous to economic and financial stocks and flows. Whether human data can ever be quantified to an extent approaching that of pecuniary assets and liabilities remains to be seen. Even Stone admits that he has made only a start.

Needs Assessment

The major focus of the present paper, however, is not on the entire planning process, nor on manpower forecasting. Rather, it is on the development and implementation of a procedure for the identification

of needs and resources as one important phase of the planning process. Ironically, the literature on educational needs assessment (aside from its general treatment in the planning literature) is as sparse as the planning literature is vast. Nearly all of it centers on assessing the needs of individual learners in public schools and stems from Title III monies having been made available to states for "state needs assessment." Of the 22 references initially found on needs assessment, nearly all were in the above category. These methods depend heavily on psychological tests to determine discrepancies in educational proficiency and are of little usefulness or relevance to the present study.

Although few reports of state needs assessments have found their way into the generally available literature, Florida's has. In it, Kurth (1971) observed:

> To attempt to assert that assessing educational need is a concept new to education would be naive. On the other hand, there is little question that this most critical component of planning and decision-making has over the years largely been left to the somewhat capricious whims of intuition and educational guessmanship.

This point is well illustrated by an examination of the state of needs assessment definitions.

Absence of Definitions

References to the term "needs assessment" have been in the literature for nearly a decade, but there is presently no universal agreement on the meaning of needs assessment in education. Sarthory (1973) stated:

> These terms (needs assessment and planning) are often used interchangeably and, even when this is not the case, they often carry many different meanings. Such confusion in the

> literature makes it extremely difficult to operationalize implicit processes and concepts at the practitioner level in the effort to improve educational practice.

Given this confusion and lack of agreement concerning a definition of needs assessment, one might expect to find few needs assessment studies in the literature without at least an operational definition of the term. Yet, of an additional 21 more recent needs assessment studies selected from the literature, nearly half were in this category--specifically, Barber and Benson (1972), Educational X-Ray of the Mapleton Public Schools (1972), Estes (1973), Flores (1973), McGuffey (1972), McMahon (1970), Mullen (1974), Street et al. (1971), and Trull (1973). Of these, Estes (1973) referred to "assessing needs and assigning priorities" without indicating the meaning of either or the relationship between the two. Trull (1973), Street et al. (1971) and Barber and Benson (1972), although not defining needs assessment, at least made an effort to describe the process. Trull (1973) suggested that needs assessment data provide the "criteria, status measure and discrepancy" related to a number of educational areas which he has delineated as being of importance. Street et al. (1971) described a "kit" which includes instruments for determining (a) the purposes of education as perceived by administrators and teachers, (b) the basic needs of schools as seen by educators and parents, (c) an inventory of instructional practices, (d) teacher opinions of their schools' organizational structure and (e) the adequacy of learning opportunities as perceived by students. Barber and Benson (1972) stated that

> needs assessment, a critical element in this model (evaluation-accountability model for regional education centers) consists of objectively identifying the needs of clients and establishing an initial list of priorities.

It is not clear whether the absence of definitions of needs assessment in the studies cited so far in this section is by design or by default. It is a fact, however, that some individuals in the field make it a point not to define needs assessment. Whatley (1975) has refused to do so (in the presence of this writer) unless given a very specific and carefully delineated context. He argued that the configuration of the process varies so greatly from one situation to the next that general definitions are meaningless. This position is shared by McMahon (1970) who, writing for adult educators on "the meaning of need," suggested that when they talk about determining community needs, "they mean many things."

> Within the limits and context of the adult educator's own philosophy of education, of the objectives and capabilities of his institutions or sponsor, of the interests and motivation of his clients, of the availability of government or outside support, each adult educator will respond in his own way to each specific situation, and standard definitions will not provide the necessary clarification.
>
> A definition will not produce uniformity of response by adult educators, nor will it resolve the nagging doubts about the desirability or efficacy of a particular program.

In his chapter on "Methods of Determining Need," McMahon (1970) stated that "the most popular or most commonly used method of determining need appears to be the survey or poll." Indeed, the community survey was the only method discussed except for cursory mention of advisory committees and a listening post device known as the whittler:

> He would go into a rural community and seat himself outside the general store. He was a confirmed whittler, and he would take out his pocket knife and a block of wood, and he would sit there and whittle. As he whittled he would listen. At the end of a day, it is alleged, he would know all that was necessary to know about the needs of that community.

Community Surveys

Occupational educators for decades prior to the vogue of "needs assessment" have been conducting community surveys as a basis for determining program offerings. Five such studies employing the word "need" (four in their titles) were reviewed. None shed any light on the definition of "needs assessment" although most--McMahon (1970), Chambliss (1966), Dodge (1967) and Lewis (1968)--made an effort to define "need." As a result of his analysis of 34 published guides to community study, Hand (1968), writing specifically for the adult educator, concluded that the following kinds of information and data about a community ought to be of significance to educators conducting community surveys: the history and community setting, the people, the economic structure, and functional operations (programs). Each of the topics was further subdivided into what to study, where to find information and what to do with it, once found. It would appear that what Hand suggested might qualify as a needs assessment although he did not define his community survey as such.

Definitions in the Literature

The most influential among those researchers who have defined needs assessment has clearly been Roger Kaufman (1972). Kaufman has defined needs assessment as the "process of determining the discrepancy between 'what is' and 'what ought to be.'" Every one of the seven recent needs assessment studies reviewed (which included a definition) used either Kaufman's definition or a very slight modification of it. Heinkel (1974), for example, stated that

> NEEDS are defined as gaps between current outcomes and achievements and (or desired) outcomes and achievements for learners, implementors and the community. NEEDS ASSESSMENT is a formal process which determines all gaps and places them in order of priority.

McGuffey (1973), Hershkowitz (1972), Educational Needs Assessment Study for Maryland (1973), and Comprehensive Planning Model for Educational Programs (1973) utilized Kaufman's (1972) definition verbatim. Sarthory (1972), who indicated that his paper "is a very brief attempt to clarify the nature of . . . needs assessment," offered the following: "In this context, a needs assessment is a discrepancy analysis which examines the discrepancy between 'where we are and where we want to be' in terms of goal achievement."

A slight modification of the above was included in Needs Assessment in Education: A Planning Handbook for Districts (1974):

> Needs Assessment is a procedure or process that identifies the perceived or expressed needs of a school district. The process involves the use of various measurements and activities to obtain the data needed to define the gap between "what is" and "what should be."

Although this definition ties needs assessment to a local school district, the influence of Kaufman (1972) is unmistakable.

Other definitions (pre-Kaufman), include Sweigert's (1971) and that used by the ESEA Title III state needs assessments, which were concerned with determining the educational needs of individual learners in schools. The Michigan Department of Education (1969) is an example of the latter and is patterned after Sweigert, who defined needs assessment as the process of determining "perceived deficiencies in the levels of student benefits."

The Substance of Needs Assessment

Although needs assessment may not be clearly defined, it is possible from an analysis of the literature to make some tentative generalizations about its forms, characteristics, tools and uses. Some needs assessments appear to be little more than status studies. Others add a need dimension in the form of conclusions to the status study. Still others prioritize a list of needs concurrent with the status study. The most comprehensive needs assessments add a list of goals to all of the above. Other, less complex approaches consist of simply querying an advisory committee or Delphi panel on what the needs (or goals) of an organization, agency or school are.

Most commonly, needs assessments exhibit at least the following characteristics:

1. They involve people in relevant groups, including but by no means confined to target populations. Generally speaking, the more people involved, the better.
2. They involve some notion of priority designation in need determination.
3. They include a description of "what is."
4. They suggest a list of goals or they provide sufficient information for decision-makers to establish goals and objectives.

The tools of needs assessment include the community survey, utilizing interviews and/or questionnaires, and management techniques such as PPBS, PERT, and management information systems. Other tools may include Delphi panels, advisory councils and the "listening post" device.

Needs assessment is a requisite step in virtually all comprehensive planning models, and it can also provide valuable data to decision-makers with regard to program inception, modification, or deletion. The recent emphasis on accountability in education has magnified the role of needs assessment in program justification. Finally, it appears that needs assessment can be a valuable source of information for legislation and resource allocation.

The most comprehensive treatment of needs assessment found by this writer was that of Kaufman (1972). He agrees with Sweigert (1971) that needs assessment is the first step in an inductive planning process, but he also suggests that it is the most important step. Despite the fact that Kaufman's (1972) planning model is built around needs assessment, he maintains that:

> It would be inappropriate to list a "hard and fast" process along with tools for doing a needs assessment, for the procedures are too new and are constantly evolving. Tools and techniques for needs assessment must be selected, evolved, or invented based on the unique conditions and circumstance of each educational context.
>
> The field of needs assessment is indeed a fledgling one. Many models and procedures are being tried, modified and reapplied. Professionals specializing in this difficult area emphasize the tentative nature of any models or procedures extant. This presentation is no exception, for we simply do not know very much about this very important subject. However, rather than skipping it because there are no cast-in-concrete, how-to-do-it prescriptions, a better choice would be to design one (perhaps using the system analysis tools described in this book) to fit individual educational requirements.

Unfortunately, the nine tools listed by Kaufman are rather obvious. Moreover, Kaufman appears to be only slightly more explicit than the planning theorists in explaining how to use the tools to the practitioner. The list is as follows:

1. Decide to plan.
2. Identify problem symptoms or obtain a request for a needs assessment from the educational agency.
3. Identify the domain for planning.
4. Identify possible needs assessment tools and procedures and select the best ones.
5. Determine the existing condition for all partners.
6. Determine the required condition.
7. Reconcile any discrepancies among the partners' viewpoints.
8. Place priorities among the discrepancies and select.
9. Make sure the needs assessment is a continuing process.

Kaufman's contention that the way to design a needs assessment study for a particular educational setting is to "do-it-yourself" is supported by an examination of other needs assessments in the literature. Those developed by ESEA Title III planners, mentioned previously, will work only for schools. Even Kassel's milestone study on the need for allied health manpower in Metropolitan Chicago, while very helpful, is not comprehensive enough to provide a guide for the planning of an Area Health Education System.

Summary

There is a wide gap between theory and practice in planning. The gap extends to occupational education planning and is so wide that local planners often ignore or disregard the vast body of theoretical planning literature for a number of reasons.

The purpose of the present study was to attempt to reduce the above problem through the development and implementation, based on planning theory, of a practical design for the collection of primary data on health needs and resources. It was assumed that if the gap could be bridged between theory and practice in one aspect of planning (needs assessment) and in one occupational education discipline (health education), then implications might be drawn for solving the problem in other aspects of the planning process or other occupational education disciplines.

Thus, the objectives of the study in abbreviated form were to:

1. Develop a procedure for assessing health education needs.
2. Determine health education needs for a particular geographic area.
3. Point out the implications of the procedure developed to other areas of occupational education.

As it is possible to write a most beautiful love story without ever defining love, so it also appears possible to conduct an adequate needs assessment without defining needs assessment. In fact, needs assessment can mean so many different things that some authorities suggest it be better left undefined in a general sense. Most researchers appear to agree that it can only be meaningfully defined in a specific, operational sense and only then, when linked to a particular educational context. For example, a national needs assessment is substantially different from a local school assessment. Neither may bear much relationship to the assessment of needs of individual learners.

In lieu of a truly meaningful definition, some of the forms, characteristics, tools and uses which comprise the substance of needs assessment have been listed. Kaufman's definition and his model appear to be the most pervasive in the literature, if not the standard for the current state-of-the-art.

In conclusion, it would seem to this writer that an inductive needs assessment could be operationally conceived as a process which: (1) defines the relevant environment through a description of the actual conditions pertaining to that environment, (2) provides a context for and input to the process of determining the desired condition or state of the relevant environment, (3) identifies unmet needs in order of priority, (4) identifies unusual opportunities, and (5) identifies the problem which prevents the needs from being met and the opportunities from being realized.

CHAPTER III

METHODOLOGY

The study attacks the problem outlined previously in a practical and heuristic way. No hypotheses were formulated nor judgments made concerning the Albemarle Area in advance. The design, therefore, is that of a descriptive and explanatory study which may provide sufficient data for hypothesis development. The study consisted of the steps shown graphically in Figure 2 and described in detail as follows.

Steps

Design. As has been previously indicated, the design was developed somewhat heuristically. While a general framework for the study was constructed during this early phase, many of the detailed activities were not finalized until the project was well underway. The planning stage, thus, concentrated upon familiarization with the area and the creation of the general design.

Because the purpose of any needs and resources assessment is obviously to provide information not otherwise available, it was necessary to determine what data were extant prior to the development of the design. Investigation associated with this determination revealed that the continuing efforts of a number of organizations had produced, over the years, a plethora of information and statistics relating to the Albemarle Area. Three sources considered to be particularly relevant and helpful were (1) the Albemarle Regional Planning and Development Commission's "First Stage Development Plan"

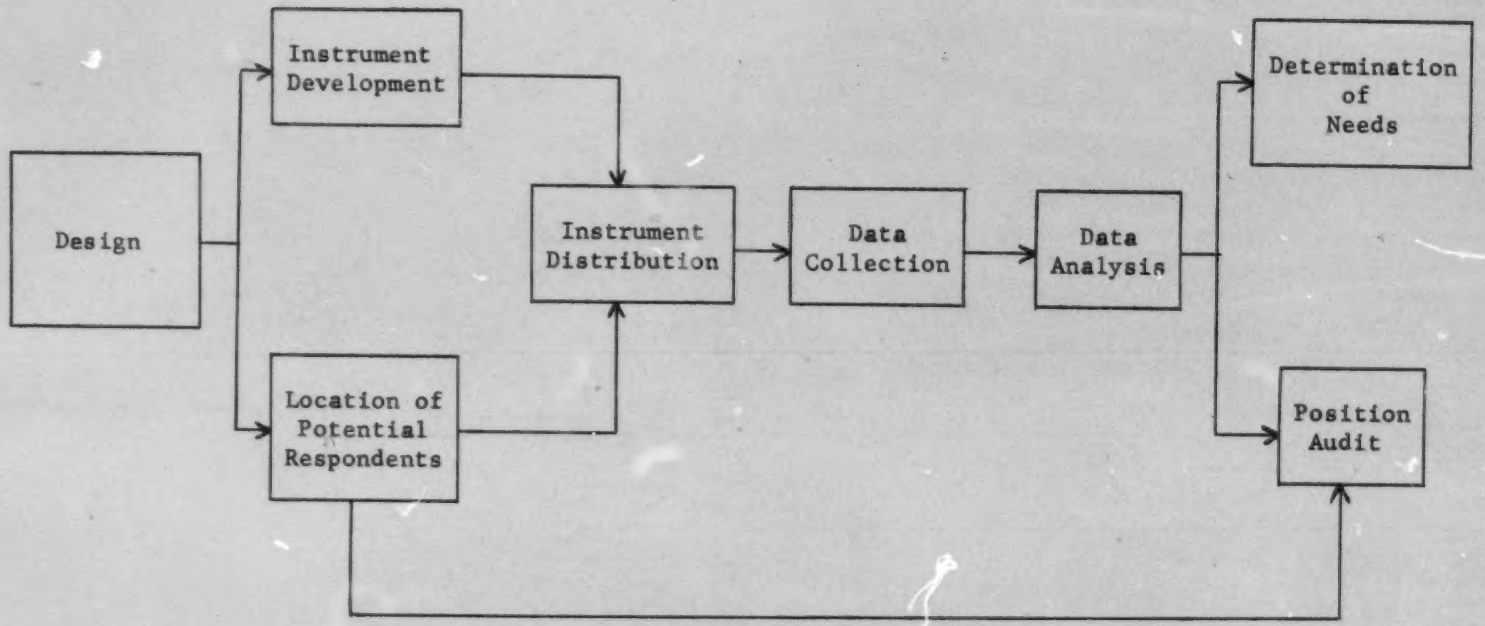

Figure 2. Flow Diagram of Implementation Steps

which provided detailed geographic, economic, and demographic data, (2) data from the North Carolina Regional Medical Program, and (3) North Carolina Comprehensive Health Planning data concerning health care status, health resources, and health manpower.

While this abundance of data was extremely useful in gaining a general understanding of the Albemarle Area and its health care system, it did not provide, because of its nature and form, a sufficient base upon which to determine priorities for the development of an Area Health Education System. Information specifically related to health education needs was nonexistent. For example, manpower needs had not only been largely unrelated to preservice education programs; they had never been accurately determined for the entire area. Further, no information was available on the inservice/continuing education needs of either health professionals or general health workers. Finally, no official area-wide coordination of health education activities appeared to exist, nor did a mechanism exist for the collection and dissemination of related information. Thus, it was apparent at this early design stage that a major effort of the study would involve the collection and analysis of appropriate data and the translation of those data into educational needs. The final step in the design phase was the development of a work plan to aid in the management of the project.

Instrument development. In the design stage, a review of existing information about the Albemarle Area indicated that an adequate survey could be made with three general types of instruments:

one for each of a number of health agencies, one for health professionals, and one for health workers. Health agencies were defined as organized public and private entities providing direct health care or health education, specifically including hospitals, public health agencies, mental health agencies, social service agencies, and educational institutions offering health programs at the secondary and postsecondary levels. A separate questionnaire was designed for each agency. Facsimiles of all questionnaires are included in Appendix C.

Health professionals were defined as individuals practicing direct professional health care services. This group included physicians, surgeons, other medical specialists, dentists, chiropractors, veterinarians, and osteopaths. One questionnaire was constructed for use by all health professionals.

Health workers included all individuals employed in the health field in health-related jobs or in non-health-related jobs in health agencies, with the exception of agency heads and those individuals defined as professionals. Identical questionnaires were distributed to all health workers. Table 1 provides a summary of the data sources and the nature of the data sought. The purpose of gathering the kinds of data identified in Table 1 is to gather valid information for use in both long-range (strategic) and short-range (tactical) planning. One of the objectives in strategic planning is the establishment of organizational missions. A broad range of missions has been fixed by the Federal Regional Medical Program and is applicable

to all AHES's in the country. However, each individual AHES may choose to encompass all or part of these basic missions. Tactical planning, simply stated, concerns more explicit details of how basic missions will be carried out. Tactical planning, thus, involves the identification of program activities and their goals.

Certain of the instruments used to collect the above planning information were modifications of those utilized by other North Carolina Area Health Education Systems for which The Institute of Human Ecology was providing consultant services. The Social Services Agency Questionnaire and the Health Professional and Employer Questionnaire were developed in their entirety by The Institute of Human Ecology.

Agency questionnaires were not field-tested because of previous use experience and because they were largely utilized as the basis for structured interviews through which any deficiencies could be compensated for by direct contact. Each questionnaire was reviewed by staff of the The Institute of Human Ecology, as well as Professor William Byrd of East Carolina University; James Lewis, Program Coordinator for AHRDS; Howard Campbell, County Health Director and AHRDS Board Chairman; and at least one representative of the group for which the instrument had been intended. Suggestions

Table 1. Summary of Data Sources

Source	Nature of Data Sought
Health workers	1. Needs for inservice/continuing education
Health professionals	1. Needs for inservice/continuing education
	2. Manpower shortages
Employers of health workers	1. Needs for inservice/continuing education
	2. Manpower shortages
	3. Ongoing health education programs and resources
Other institutions/agencies	1. Manpower shortages
	2. Ongoing health education programs and resources

from these individuals were incorporated into the final draft of each questionnaire. The content of each instrument was tailored to fit the study objectives for that particular agency or institution and may be examined in Appendix C.

In certain agencies in addition to those discussed previously, no questionnaire was used. These agencies, which were one of a kind, small, or only marginally related to the health field or to health education, were surveyed through structured interviews by telephone or personal contact. Such agencies included rest homes, the Agricultural Extension Service, voluntary health agencies, E. I. C., the Employment Security Commission (MDTA), and the U. S. Coast Guard. Police and fire departments, rescue squads, and private ambulance companies were not

included in this study because a separate survey of these agencies is being conducted through a different grant. Most of the institutions likely to provide inservice education to these agencies were included, however, in the present study.

Instrument distribution and data collection. Location of potential respondents proceeded concurrently with instrument development and was accomplished through: (1) utilization of previously collected data, (2) careful study of the four telephone directories which serve the area, (3) examination of professional association registers, and (4) use of public and private agency data. These information services permitted the entire population of health professionals and employers, health workers, and health agencies in the area to be included initially in the survey process. More than 1,200 questionnaires of all kinds were distributed.

The complexity of the instrument distribution task was increased to some extent because of the existence of institutions and agencies outside the Albemarle Area which serve area clientele. This was particularly true in the case of educational institutions. Through information provided by the North Carolina Department of Community Colleges, it was learned that seven North Carolina community colleges and technical institutes outside the Albemarle Area regularly draw students from that area. A similar query to the State Council of Higher Education for Virginia revealed that two colleges and two community colleges in the Tidewater area also enrolled Albemarle students. These 11 institutions, plus the two inside the Albemarle Area and East Carolina University, comprise the 14 educational institutions to which questionnaires with

cover letters were mailed. The two high schools in the area offering health occupations programs were contacted by telephone.

All four hospital administrators were personally contacted, and the hospital questionnaire was used as the basis for a structured interview. Four of the ten public health departments were contacted in the same manner. The remaining six were mailed questionnaires with cover letters. The single Albemarle Area mental health clinic was contacted personally; two clinics outside the area which serve patients in the area were mailed questionnaires with cover letters. Questionnaires with cover letters were also mailed to the ten social service agencies serving the area and to the Vocational Rehabilitation District Office.

Heads of each of the above agencies, with the exception of the educational institutions, were given sufficient health worker questionnaires for distribution to all employees. Health worker questionnaires, though distributed by agency heads, were returned (with the exception of one hospital) directly by the agency employees in postage-paid, return-addressed envelopes. This mode of return, with the single exception noted, applied to all health worker questionnaires which were distributed.

All health professionals were mailed a copy of the health professional questionnaire with a cover letter asking them to distribute health worker questionnaires (which were included) to any persons who might be employed in their offices. The number of health worker questionnaires included was determined by examining data from the Comprehensive Health Planning Agency.

Health worker questionnaires were also distributed through personal contact with the Economic Improvement Council--which at that time was responsible for a family planning program involving 16 outreach workers--and by mail to the two boarding homes, 15 pharmacies, and six school nurses in the area. A summary of the types and numbers of agencies and the number of health workers surveyed, along with the tasks served by each query, is included in Table 2.

Data analysis. This section describes how the data collected via the instruments were aggregated and analyzed. For ease in discussion and understanding, a background review of the kinds of questionnaires and their respective topics is presented in Table 3.

Data analysis for public health departments, mental health agencies, social service agencies, educational institutions, and hospitals consisted simply of compiling the information received from each of these agencies onto one master questionnaire. Data from these agency questionnaires concerning current services, facilities, materials, and coordination activities form the basis for the analysis of these agencies. Indications of inservice/continuing education needs and manpower shortages from these queries are reported separately under appropriate headings.

The data generated by the health professionals and employers questionnaires were compiled in a manner similar to that described above for agencies. Studies were also made to determine if the sample of health professional respondents was typical of the universe of health professionals in the Albemarle Area. Measures of central tendency were applied to the age, weekly work hours, and weekly patient loads of the

Table 2. Summary of Instrument Distribution

Agencies Contacted			Health Worker Questionnaires Delivered	Tasks Served		
Number	Name	Contact Method		Continuing Education Needs	Manpower Needs	Existing and Planned Health Programs
1	Agricultural Extension Service	Telephone query to regional office	1	x	x	x
1	U. S. Coast Guard	Telephone query to regional office	0	x	NA	x
16	Educational Institutions: 14 colleges, 2 secondary schools	Mailed questionnaire Telephone interview	0			x
1	Economic Improvement Council	Structured interview	16	x		x
2	U. S. Employment Security Commission (MDTA)	Telephone query to area offices	NA			x
73	Health professionals	Mailed questionnaire	154	x	x	x
	Health workers	Questionnaire distributed through employers	All sources: 1125	x		
4	Hospitals	Structured interview/ questionnaire	713	x	x	x

Table 2. (continued)

Agencies Contacted			Health Worker Questionnaires Delivered	Tasks Served		
Number	Name	Contact Method		Continuing Education Needs	Manpower Needs	Existing and Planned Health Programs
3	Mental Health Agencies	Structured interview/ questionnaire or mailed questionnaire	27	x	x	x
2	Boarding Homes	Telephone interview	16	x	x	x
15	Pharmacies	Health worker questionnaires distributed to pharmacists by employers	31	x		
10	Public Health Agencies	Structured interview/ questionnaire	63	x	x	x
11	Social Service Agencies (including Vocational Rehabilitation)	Mailed questionnaire	93	x	x	x
6	School Nurses	Mailed questionnaire	11	x		
3	Virginia Department of Community Colleges, Virginia Council on Higher Education, Virginia RMP	Letters of inquiry	NA	x	x	x

Table 3. Summary of Instruments and Respective Topics of Concern

Instrument	Major Topics of Concern
Health Worker Questionnaire	Inservice/continuing education needs of health workers as perceived by health workers
Health Professionals and Employers Questionnaire	1. Inservice/continuing education needs of professionals as perceived by professionals 2. Inservice/continuing education needs of employees as perceived by professionals 3. Most critical overall health manpower shortages as perceived by professionals and employers 4. Position titles most critically in need of inservice/continuing education as perceived by professionals and employers
Hospital Questionnaire	1. Number of personnel by position titles 2. Most critical overall health manpower shortages as perceived by hospital administration 3. Position titles most critically in need of inservice/continuing education as perceived by hospital administration 4. Most critical need for career ladder mobility programs as perceived by hospital administration 5. Specific educational needs of staff as perceived by hospital administration 6. Staff turn-over rates 7. On-site health education and training programs 8. Education and training facilities and materials 9. Coordination activities, current and desirable
Public Health Agency Questionnaire	1. Current services 2. Number of full-time positions 3. Most critical manpower shortages among public health agency personnel as seen by public health adms.

Table 3. (continued)

Instrument	Major Topics of Concern
	4. Most critical needs for inservice/continuing education among public health agency personnel as perceived by public health agency administrators 5. Most critical needs for career ladder mobility programs among public health agency personnel as perceived by public health administrators 6. Specific staff education and training needs of public health agency personnel 7. Internal education and training programs for staff 8. Patient and general community education programs 9. Education and training facilities and materials 10. Coordination activities, existing and desirable
Mental Health Agency Questionnaire	Same as public health agency questionnaire
Educational Institutions Questionnaire	1. Current health-related educational offerings 2. Projected health-related curriculum offerings 3. Continuing education and inservice courses offered and planned 4. Education and training facilities and materials 5. Coordination, existing and desirable

health professionals. Medians, and in some cases modes, were determined for these categories.

This information was compiled from questions on manpower shortages included on all questionnaires (except health workers). Priority scores were assigned by simply assigning a "priority scale." Areas of most acute manpower shortage as ranked by professionals and employers of health manpower were also determined. Individuals were asked to rank items on a one-to-five scale with one being the highest priority and five being the lowest.

Various personnel comparisons between the Albemarle Area and the United States as a whole were made, as well as comparisons between the Albemarle Area and selected similar rural areas in the United States. These comparisons included percentage of physicians in each of several common specialties, area population per physician, population per physician by county, and physician-to-population ratios.

The health professionals and employer questionnaires were also analyzed to determine: (1) the health position titles perceived most in need of inservice education, (2) the position titles judged most in need of career ladder mobility programs, and (3) the inservice needs of professionals as indicated by professionals themselves.

While the basic purpose of the health worker questionnaire was to determine inservice education needs, other information was also requested. This additional information included age, sex, position title, years in position, years in health field, place of work, work hours, amount of education, and type of diploma or degree if applicable. Data

from these instruments were coded and processed to develop a variety of potentially useful listings or distributions as shown in Table 4.

Table 4. Health Worker Questionnaire Two-Way Data Distributions

Age/amount of education
Age/workplace
Age/number of needs listed
Age/work hours
Sex/position title
Sex/experience (health field, position title)
Sex/workplace
Sex/work hours
Sex/amount of education
Sex/degree
Sex/number of needs listed
Position title/number of needs listed
Position title/amount of education
Position title/work hours
Position title/amount of education or degree
Years in position/workplace
Years in position/work hours
Years in position/number of needs listed
Workplace/workhours
Workplace/number of needs listed
Work hours/years in health field
Needs/position title
Needs/sex
Needs/age
Needs/experience (health field, present job)
Needs/workplace
Needs/amount of education

Each health worker was directed to think of as many of his own needs (Table 4) for inservice education as he could, list them, review the list, and number the top three in order of priority. Most pressing

needs received a designation of one, next most acute two, and third-level needs three.

In analyzing these needs, a similar procedure to that employed with the health professionals and employers questionnaire (which had five priority levels) was utilized. That is, needs judged by health workers to be top priority (numbered one) were multiplied by a factor of three; those designated as priority two were multiplied by a factor of two; and those judged as third-order were multiplied by a factor of one. All points given to each need by all responding health workers were subsequently aggregated, resulting in a separate priority score for every need.

Data utilization - determination of needs and current state. In order to facilitate both the analysis of the data and their utilization in decision-making, certain of the data were generically grouped. Codes were devised as indicated previously. For example, the 77 occupations indicated by health workers were grouped into eight categories. Data concerning degrees, diplomas, and certificates were reduced to 12 categories. Finally, the actual needs listed by the health workers (totaling 173) were reduced to 20 groups.

The grouping methodology in each instance was developed heuristically after the data in each of the aforementioned areas had been collected. Classification of the data in this manner was intended to facilitate understanding of the various areas. Needs by group can be found later in this report in Table 19.

Limitations

The study is subject to the errors commonly associated with the use of questionnaires for the collection of data. Among these are:

1. Systematic questionnaire bias. Respondents, for the most part, answered only questions which were asked of them. It is possible, though, that vital questions were overlooked.
2. Possible misunderstandings of instructions. It is obvious that this happened in at least a small number of cases.
3. Interpretations of no response and incomplete response questionnaires. No information is available to indicate why some individual health workers chose not to respond, some responded but indicated they had no needs, and some responded but left the need section blank. Data regarding similarities and differences among these three groups and/or among those who responded fully are not available.

In addition to these possible instrument design errors, the study is affected by sampling errors induced by the use of a self-selected sample. The entire population of health workers, professionals, agencies, and institutions in the Albemarle Area was contacted. Response percentages ranged from nearly 40 percent in the case of health workers to 100 percent for hospitals. There is, however, some evidence to indicate that the samples of health workers and health professionals, though self-selected, may, in fact, be quite representative of their respective universes. Health worker position title distributions, for example, do not vary substantially between the sample and the actual population.

CHAPTER IV

HEALTH SERVICES AND FACILITIES

Introduction

The study findings are reported in this and the next three chapters. Subsequent chapters discuss inservice/continuing education needs of health workers from all sources, needs of health professionals for inservice education, and, finally, manpower shortages from various sources.

This chapter reviews current services, programs, materials, and facilities available at the various agencies and institutions surveyed. Hospitals are reported first, followed by public health departments, mental health clinics, social service agencies, educational institutions, and the agricultural extension service. The chapter concludes with a discussion of coordination activities conducted during the past year among all the agencies listed above.

Hospitals

The Albemarle Area has four hospitals, all of which participated in the survey. The Albemarle Hospital, located in Elizabeth City, is a non-profit, county-owned institution and is the largest (152 beds) hospital in the area. Second in size is Chowan Hospital, a 117-bed, non-profit facility in Edenton. As its name implies, Washington County Hospital in Plymouth is county-owned. It has 36 beds currently, but it will be expanded and modernized through the acquisition of an

entirely new physical plant in the near future. Data presented here refer to the present facility. Smallest of the four is 32-bed, privately-owned Columbia Memorial Hospital located in Tyrell County.

Table 5 provides a summary of the clinical facilities and services available at area hospitals. No attempt was made to assess the relative quality of the clinical services offered nor the number of patients served by each. The number of different services offered in the Albemarle Area is apparently a function of hospital size rather than demonstrated patient need.

Of the four hospitals, only Columbia reported no facilities of any type for on-site educational programs. Available space for such programs at the other three is displayed in Table 6.

Without exception, the hospitals indicated a willingness to share facilities, equipment, and materials if a proper system were developed around an educational program. None of the four hospitals reported the presence of an institution-developed list or catalog of on-site training materials (e.g., journals, newsletters, films, filmstrips, etc.), but all have catalogs published by other agencies.

The absence of education committees, directors of inservice education (hospital-wide, or for physicians or allied health personnel), manpower needs surveys (existing or planned), and functional task analyses of positions is a characteristic shared by all four institutions. Albemarle and Chowan, however, conduct periodic job performance evaluations of all employees.

Only Columbia lacks at least a part-time director of inservice education for nurses, offers no general orientation for new staff, and

Table 5. Summary of Clinical Facilities and Services/Hospitals

Facility or Service	Albemarle	Chowan	Washington County	Columbia
Intensive Care Unit	x*	x	x	x
Coronary Care Unit	x	x	x	x
Organized Emergency Care Department	x	x	x	x
Pharmacy (with Registered Pharmacist)	x	x	x	x
Post-Operative Recovery Room	x	x		x
Inhalation Therapy Department	x	x		
Pathology Lab (with Pathologist)	x	x		
Physical Therapy Department	x	x		
Premature Nursery	x			
Extended Care Facility as Part of Hospital Service		x		
Affiliation Agreement with other Extended Care Facility			x	
Social Work Department		x		
Organized Outpatient Department				
a. Physician Clinic b. Nurse Clinic	x			
Electroencephalography				
Home Care Program				
Dental Facilities				
Rehabilitation Inpatient Unit				
Psychiatric Inpatient Unit				

*x denotes service availability.

Table 6. Facilities for On-Site Education Programs/Hospitals

Facility	Albemarle		Chowan		Washington County	
	No.	Capacity	No.	Capacity	No.	Capacity
Classroom	1	40	1	40	1	20
Library/Conference Room	1	20	1	18	1	12
Cafeteria	1	50	2	75	1	34

provides no hospital-organized inservice training programs of any type. Washington County stands alone by the inclusion in its operating budget of an allocation specifically for inservice/continuing education.

The data on hospital-conducted inservice education programs are incomplete because the Chowan Hospital respondent inexplicably left several pages of that questionnaire blank. On-site inservice training programs for limited specific groups of workers were reported by the Albemarle Hospital and by Washington County. This is probably also true of Chowan.

The area hospitals indicated that they had no medical school affiliation, residency, or internship programs. Washington County and Albemarle do have summer student extern programs. Although none of the hospitals has a professional nursing school, Albemarle has affiliated nursing students from C.O.A.; Columbia serves as a laboratory for a nurses' aide training program offered by Beaufort Technical Institute; and Washington County Hospital offers its own six-week program for aides.

The only patient or patient-family education program was a baby care seminar for Albemarle Hospital obstetrical patients. With the possible exception of Washington County Hospital's past efforts with a diabetic dietary management program, none of the respondents indicated an involvement in organized, hospital-sponsored health education programs for their communities at large.

Hospital-sponsored education programs in the Albemarle Area, despite the presence of expressed needs and adequate facilities, are at best very limited. Short and somewhat sporadic courses for coronary care unit personnel, intensive care unit personnel, and CRP personnel, plus some housekeeping/health and safety programs for other personnel, comprise all examples of such programs reported.

Public Health Departments

The ten public health agencies in the Albemarle Area operate under county auspices. Completed questionnaires were received from seven of these agencies serving the following counties: Camden, Chowan, Gates, Pasquotank, Perquimans, Tyrrell and Washington.

Table 7 provides a summary of the services offered by county public health agencies as well as the temporal basis upon which each is offered. As is shown, most of the direct human services commonly offered by public health agencies are available on one basis or another in the Albemarle Area. There is, however, no vasectomy clinic nor developmental evaluation clinic offered by the public health agencies. A developmental evaluation clinic is held monthly in Edenton, under other auspices. Dental health services are offered only to school

Table 7. Current Services/Public Health Departments

Service	Daily	Weekly	Semi-Monthly	Monthly	Other
Diabetic Screening Clinic		A,C,D,J*	H	G	A,B,C
Cancer Screening Clinic		A	C,D	B	G (twice yearly)
Vasectomy Clinic					
Maternity Clinics					
a. Pre-natal		A	C,D,H	B,G	
b. Post-natal		A	C,D,H	G	
c. Family Planning			A,D,H	B,C,G	
Immunization Clinic	B	A,C,D,G,J			H (twice weekly)
Eye Clinic				A,B,H	C,D (quarterly)
TB (Chest) Clinic		B			A,C (bimonthly)
Glaucoma Screening Clinic			H	G	
Home Health Care Services	A,C,D, G,J			A	H (3 days per week)
Pediatric Clinic			H	C,D,G	

Table 7. (continued)

Service	Daily	Weekly	Semi-Monthly	Monthly	Other
Nurse Screening Clinic (Pediatric)		B	A,C,H	D,G	
Orthopedic Clinic				A,B	
General Clinic		A,H		B	
VD Clinic	B				A,C,D (open door)
Dental Health Services					A,C,D (schools only) G,H (mobile unit)
X-ray Department	A,C,D,H			B	

*A = Pasquotank, B = Hertford-Gates, C = Chowan, D = Perquimans, G = Tyrrell, H = Washington, and J = Camden.

pupils, except in Washington and Tyrrell counties where they exist on a limited basis for adults.

Facilities for the conduct of health education activities on county health department premises are virtually non-existent. Only the Hertford-Gates Health Department reported a conference room of sufficient capacity to seat 50 people. Other agencies, however, have access to various facilities not under their direct control which could be utilized with advance scheduling.

The Washington, Tyrrell, and Hertford-Gates departments have printed lists of audio-visual training aids available but no lists of magazines, journals, or pamphlets. Perquimans, Chowan, Pasquotank, and Camden departments have printed publications cataloged, but no audio-visual aids.

Some sharing of facilities is in evidence. The Pasquotank, Chowan, Perquimans, and Camden departments share clinical space with East Carolina University and are affiliated with the College of the Albemarle for student experience. The Hertford-Gates department shares films and pamphlets with the State Board of Health and with the Department of Air and Water Resources.

All public health departments responding indicated the availability of both general orientation programs for new staff members and inservice education programs for continuing employees. Only Hertford-Gates reported a formal system for the assessment of staff training and education needs consisting of conferences between the PHN supervisor and her staff.

The word "formal" used here and in the questionnaire may have caused some definitional difficulties with respondents. Undoubtedly, some of the other agencies use the same method of determining needs as Hertford-Gates, but perhaps did not consider it to be a "formal" enough system to report. None of the responding agencies has conducted recent surveys regarding health education needs in their catchment areas.

Examples of 1971-72 inservice education programs conducted by the Pasquotank, Chowan, Perquimans, and Camden County departments include:

Teaching in a Clinical Setting (elective for nurses);

Family Planning Workshop (all nurses); and

Venereal Disease Workshop (all nurses and clerks).

The Washington and Tyrrell departments have offered programs for nurses on Sickle Cell Anemia and Genetics.

The Pasquotank, Chowan, Perquimans, and Camden departments are jointly working on an inservice/continuing education model for implementation during the next two years, while the Hertford-Gates department is currently in the process of formulating future inservice programs.

All responding departments with the exception of Hertford-Gates offer some type of patient and/or general community education programs. Hertford-Gates is presently planning an approach to community education. The Pasquotank, Chowan, Perquimans, and Camden departments have provided a family planning program for Elizabeth City State University, a VD education program for the four junior high and high schools, and a program on care of the aged for students of the College of the Albemarle. The Washington and Tyrrell departments have operated a dental education program in the public schools of those counties. Future plans of the

Pasquotank and Perquimans departments include a program on tuberculosis for the College of the Albermarle, one on birth defects for Elizabeth City high schools, and one on cancer and diabetes detection for EIC personnel and the Salvation Army.

While the general frequency of health education in the area is not high, it should be noted that the public health agencies stand out in the number of programs offered or planned when compared to the other agencies surveyed. This applies to both inservice education activities for staff members and community education programs for patients, students, and laymen, both current and planned. Responses from these agencies also indicate a high degree of coordination and cooperation between them and other agencies in an effort to squeeze the maximum effectiveness from scarce resources, materials, and facilities. No formal surveys or studies regarding health education needs of staff or consumers (e.g., general public) were reported as having been conducted by any of the public health agencies, however.

Mental Health Agencies

Two mental health agencies serving nine of the ten counties in the area responded to the survey. The Albemarle Mental Health Center in Elizabeth City provides services to Camden, Chowan, Currituck, Dare, Pasquotank, and Perquimans counties. The Tidelands Mental Health Clinic in Washington provides similar services to Tyrrell, Washington, and Hyde counties, as well as two others outside the Albemarle Area.

Services offered by both agencies include one-to-one, group, family, and marriage counseling; psychological testing; consultant

services to other professions, public information programs; and education and training programs for other professions. Additionally, the Tidelands Mental Health Clinic offers day-care programming for retarded persons, both children and adults. In addition to services for the general public, programs are available for clientele groups which include school children, correctional institutions, retarded persons, and alcoholics and their families.

Public information programs operated by the Albemarle Mental Health Center have included speeches, radio programs, and newspaper articles. Similar public information/education programs offered by the Tidelands Mental Health Center have included an Alcohol and Drug Abuse Education Program for public school students and occasional single presentations to community groups and visitors.

The Albemarle Mental Health Center conducted education/training programs for other professions for the period 1971-73 which included a ministers' seminar, a nursing education program, a teachers' seminar, and a social workers' seminar. During the same period the Tidelands Mental Health Clinic provided guidance and counseling workshops and pastor counseling workshops and participated in ongoing case consultations with other agency professionals.

Despite the lack of a formal system for the assessment of educational and training needs of the staff at either clinic, both reported the availability of general orientation programs for new staff as well as inservice training programs for continuing staff. Neither indicated the presence of orientation or inservice training programs for volunteers. Whether these agencies utilized volunteers was not determined.

Examples of inservice training activities at the Albemarle Mental Health Center during the past year include programs on child development and one on psychiatric case orientation, both for professional staff. Plans for 1973-75 inservice training called for a continuation of on-going programs.

The Tidelands Mental Health Clinic reported that all staff had participated in a staff development program and that they plan to continue this program with additional input from any field during 1973-75. They did not indicate, however, the specific staff development activities in which the entire staff had been involved.

The patient and general community education programs at both mental health agencies were limited to alcohol and drug abuse education programs for junior high school students and various educational encounters with the general public and news media.

The Albemarle Mental Health Center indicated the absence of available facilities for the conduct of health education programs under their direct control. They did indicate that various facilities in nearby hospitals, churches, and schools can be utilized by them with some advance notice. Five conference rooms with a seating capacity of 300 persons and one library capable of seating 15 are available for shared usages for educational purposes at the Tidelands Mental Health Clinic. The Tidelands Clinic also shares buildings, equipment, and staff with the County Development Center, ECU, and Beaufort County Technical Institute.

The Albemarle Mental Health Center considers that it has minimally adequate training materials but does not have an organized list

of these materials in terms of either audio-visual aids or printed publications. The agency did indicate that it had plans for developing such listings. The Tidelands Clinic indicated that it did not have minimally adequate training materials but did have a listing of audio-visual aids with plans to develop a printed list or catalog of printed publications.

These two agencies provide clinical outpatient mental health services for a potential nine-county population of 90,000. Both depend on part-time psychiatrists from Tidewater Virginia. Their combined staffs include fewer than 20 persons. It is hardly surprising that they have not found time to plan and conduct more elaborate educational programs.

Social Service Agencies

Each of the ten counties in the Albemarle Area has a county department of social services. Additionally, the District Office for Vocational Rehabilitation of the North Carolina Department of Human Resources is located in Elizabeth City and provides vocational rehabilitation services to the entire region. These eleven agencies were surveyed by questionnaire. Several other agencies involved in limited specific social service programs were also contacted by either telephone or personal visit; information gathered from them is included elsewhere in this section. Of the eleven social service agencies, six responded--the Division of Vocational Rehabilitation District Office and five county departments of social services. These departments and their locations are shown on the following page.

Department	Location
Dare County Department of Social Services	Manteo
Camden County Department of Social Services	Camden
North Carolina Department of Human Resources, Division of Vocational Rehabilitation District Office	Elizabeth City
Hyde County Department of Social Services	Swan Quarter
Washington County Department of Social Services	Plymouth
Tyrrell County Department of Social Services	Columbia

Table 8 provides a summary of the services to individuals provided by these agencies.

In addition to the services in Table 8, some agencies provide services to other groups. For example, the Dare, Washington and Tyrrell departments indicated that they provide consultant services to other professions. Agencies in Dare and Tyrrell counties also provide unspecified education and training programs to other professions. Drug abuse seminars for unspecified groups have been held by the Dare Department of Social Services.

The Camden and Tyrrell departments indicated that they have sponsored public information programs but did not specify the nature of these programs, nor the target groups. The Camden County department has presented educational programs in county schools on the legalities concerning child abuse and neglect. The Hyde County department indicated that public information programs are available for clients individually or collectively, apparently upon request.

Social service departments in Hyde and Tyrrell counties reported that no formal system for the assessment of staff training and educational needs existed in those agencies. Dare County indicated that their system follows the State Personnel Plan, and the Washington

Table 8. Summary of Services Provided by Social Service Agencies

Service	Direct	Through Referral	Not Available
Adoption	B,E,G		C
Boarding Homes/Foster Homes/ Residential Facilities for:			
Aged	A,B,G	A,D,E	C
Blind	A,B,G	A,D,E	C
Developmentally disabled	A	A,B,C,D,E	
Infants	A,B,D	A,E	C
Orphans to age (B-18, E-18)	B,D	A,E	C
Mentally retarded		A,B,C,D	A
Others (specify) (B-neglected or abused children)		D	
Counseling:			
Alcoholism	A,B,C,D,E	A,E,G	
Individual	A,B,C,D,E,G	A,E	
Family Planning	A,B,D,E,G	A,E	C
Genetic	D	B	A,C
Group	A,B,D,G	A	C
Marriage/family	A,B,D,G	A	C
Other (specify)			C
Day Care for:			
Mentally retarded		D	E
Children		D,G	A,B,C
Adults		D	A,B,C
Others (specify)			
Diagnosis:			
Medical		A,B,C,D,E,G	
Psychological	G	A,B,C,D,E	
Others (specify) (C-other clinics)		C	
Homemaking Services	A,D,E	A	B,C,G
Self-Care Skills Training		B,C,D,E	A,G
Sheltered Workshops		C,D,E	A,B,G

Table 8. (continued)

Service	Direct	Through Referral	Not Available
Other Services to Individuals (specify) (C-prosthetics, training, equipment, maintenance)		C	

*A = Dare, B = Camden, C = N. C. Department of Human Resources, D = Hyde, E = Washington, and G = Tyrrell.

Department indicated the use of performance evaluations at specified intervals upon which needs for inservice education are presumably based.

Only the District Office of Vocational Rehabilitation in Elizabeth City reported the presence of a formally organized training division with a director of inservice and continuing education. Formal educational programs for vocational rehabilitation personnel are readily available, and certain specific courses are mandatory.

While all social service agencies in the region have some kind of general orientation program for new staff, only Camden, Tyrrell and Vocational Rehabilitation reported regular inservice training programs for continuing staff. Dare and Hyde reported no inservice programs of any kind for staff members. Only the Washington County Department has orientation and/or inservice training for volunteers. Camden County indicated that their inservice training was done on the job by experienced workers in the field.

The Vocational Rehabilitation District Office reported orientation for new counselors, staff reports on special interest topics and activities, and district medical consultant lectures as a part of their

inservice education for 1971-72. Only the Vocational Rehabilitation agency indicated any plans for inservice education during the next two years. Such training is to be an educational package spelled out by the State Vocational Rehabilitation Agency.

Without exception, all social service agencies failed to list any examples of agency-conducted client or general community education programs. Social service agencies are typical of other health-related agencies in the Albemarle Area in that they, too, have, without exception, not conducted surveys or studies regarding the education needs of their staffs or clientele. This is interesting in light of the fact that some reported formal systems for the assessment of training and educational needs (at least of their staff). One can perhaps surmise that these are not operating with a high degree of effectiveness.

Again without exception, the six agencies responding indicated that they had available at least minimally adequate training materials and equipment. Vocational Rehabilitation and Hyde County have printed lists of audio-visual materials. Camden County does not have such a list but plans to develop one. Vocational Rehabilitation and Washington County have printed lists of publications available.

Half of the agencies responding presently share training facilities, equipment, or materials with other institutions for educational purposes. The Washington County Department shares office space with the County Health Department. Vocational Rehabilitation shares sheltered workshop space and remedial facilities with the public schools. The Dare County Department indicated shared facilities, equipment, and materials but failed to specify what was shared with whom. The Hyde County Department indicated a need for improved or expanded materials,

facilities, and equipment. Materials are currently available to the Hyde County Department only through the North Carolina State Office of Social Services.

In addition to the County Department of Social Services and the District Office of Vocational Rehabilitation, one other agency in the area was found to be at the interface of social services and health. Edenton-based and OEO-CAP-funded, the Economic Improvement Council, at the time of the survey, provided family planning services throughout the area. Although this program is no longer a function of E.I.C., the services still exist, essentially unchanged. Sixteen people, including a supervisor and outreach workers, are involved in furnishing services. The outreach workers receive initial training upon employment and attend inservice education sessions monthly or twice monthly. While materials are available, facilities for the conduct of inservice education programs are currently very limited.

Educational Institutions

Two secondary schools and two postsecondary institutions located within the Albemarle Area and 12 postsecondary institutions outside the area which draw students from the area were included in the survey of educational institutions. The two secondary schools were surveyed through telephone interviews; the 14 postsecondary institutions were mailed the Educational Institution Questionnaire with an accompanying cover letter.

Survey of Secondary Schools

While many high schools in the area offer isolated health courses or some other type of limited health education, only two--Columbia High School in Columbia and Northeastern High School in Elizabeth City--have formal career preparatory programs in health occupations. Briefly, health occupations programs provide sequential courses designed to stimulate student interest in the health field and to prepare students for further education or for job opportunities as health assistants to the medical team.

The programs at Columbia and Northeastern follow the state guidelines for health occupations courses as promulgated by the North Carolina Department of Public Instruction. Both schools offer ninth-grade students some introduction to the health field.

At Columbia all ninth-graders are required to take 12 weeks of health. Northeastern has a one-semester Introduction to Health course starting during the spring semester of this year.

For tenth- and eleventh-grade students at both schools, Health Occupations I is offered. This course introduces the student to the health field, to concepts of personal family and community health disease control, to the ethical and professional aspects of health occupations, to communication skills, to basic sciences, and to the job opportunities in the health field.

Health Occupations II is offered at both schools for twelfth-graders and provides the student with more in-depth studies of body systems and diseases, diagnosis, treatment, and rehabilitative measures. Multiple health care skills are taught in a laboratory setting.

Through the cooperation of community health agencies the student receives learning experiences based on classroom instruction and becomes well oriented to the clinical environment, medical teams, and the individual contributions of the health assistant as a member of the health team. Close cooperation by nearby hospitals and county health departments with these programs is either in effect or planned.

At both schools, health occupation courses are taught by registered nurses. The number of students enrolled in each course at the various grade levels in either school is shown in Table 9.

Table 9. High School Students in Health Occupations by Course and Grade

Grade	Course	Columbia High School	Northeastern High School
9th	Health and Physical Education or Introduction to Health	23 students	
10th and 11th	Health Occupations I	38 students	20 students
12th	Health Occupations II	2 students	8 students

Columbia High School expected to have 10 to 15 health occupations graduates next year. Northeastern expects to graduate 10 to 20 per year after this year. These graduates should be prepared for initial employment as assistants in hospitals, therapy centers, public health agencies, laboratories, or professional offices and, additionally, should have the technical knowledge and skills for advancement in those occupations. Alternatively, health occupations students may prefer to

continue their education and training in the health area at an institution of higher education.

Survey of Postsecondary Institutions

As indicated previously, the Educational Institution Questionnaire was mailed to 14 selected colleges and technical institutes in and outside the Albemarle Area. Despite follow-up telephone calls, letters, and a second questionnaire mailing, only five schools responded. None of the five was in the Albemarle Area. Three were located in Tidewater Virginia.

The institutions to which questionnaires were mailed are listed below. Asterisks indicate those responding.

Beaufort Technical Institute, Washington, N. C.
Chowan College, Murfreesboro, N. C.
College of the Albemarle, Elizabeth City, N. C.
East Carolina University, Greenville, N. C.
Elizabeth City State University, Elizabeth City, N. C.
Frederick Community College, Portsmouth, Va.
*Hampton Institute, Hampton, Va.
Martin County Technical Institute, Williamston, N. C.
*Norfolk State College, Norfolk, Va.
Old Dominion College, Norfolk, Va.
Pamlico Technical Institute, Alliance, N. C.
*Pitt Technical Institute, Greenville, N. C.
*Roanoke-Chowan Technical Institute, Ahoskie, N. C.
*Thomas Nelson Community College, Hampton, Va.

While a 35 percent response rate might be acceptable under more usual survey circumstances, this factor, combined with the narrow geographic distribution of the responding institutions (60 percent from Tidewater Virginia), makes the data virtually useless for their intended purposes.

In spite of the non-representativeness of the data, they can serve, when combined with information from other sources (e.g., college

catalogs, etc.), as the basis for some very cautiously interpreted inferences about postsecondary preservice education in and near the area. First, it would appear that, with the exception of medical education beyond one year, virtually every curriculum offering listed in Section I of the Educational Institution Questionnaire is available to Albemarle Area students who are willing and able to travel as far as an imaginary semi-circle connecting New Bern, Greenville, Ahoskie, and the Norfolk Metropolitan area.

Quite the opposite is the case for the Albemarle Area proper, which has only two postsecondary educational institutions--Elizabeth City State University and the College of the Albemarle. While neither responded to the survey, they did respond to a request for catalogs. Elizabeth City State University offers no career health programs other than physical education. The College of the Albemarle has a 12-month practical nurse education program, a two-year associate degree program for the preparation of registered nurses, and a training program for ambulance attendants.

It is obvious, then, that while a variety of health career preservice education programs are available within reasonable proximity to the northern and western borders of the area, few are offered within the area itself. It should be noted that the geography of the area and the lack of high-speed highways make commuting to the schools outside the region prohibitive for large segments of the population. Further, total out-of-state enrollment figures at the Tidewater Virginia institutions (which averaged around 10 percent in 1970-71) do not suggest that those schools have been used extensively by North Carolina pupils.

The remainder of this section is based on data derived from the five responding institutions and cannot be generalized to other institutions. The five include two technical institutes, one community college, one public four-year institution, and one private four-year institution. Although none of the five has conducted any recent health manpower surveys, three plan to develop new health-related preservice programs during the next two years in the following areas: associate degree nursing (2 years, capacity 20, 2 instructors); medical office assistant (18 months, capacity 15, 1 instructor); X-ray technician (18 months, capacity 20, 1 1/2 instructors); operating room technician (9 months, capacity 20, 1 instructor); and laboratory technician (18 months, capacity 20, 1 instructor). Further, graduate programs in speech pathology (master's degree, capacity 10, 2 instructors) are also proposed.

During the period 1972-74, these five institutions alone will have conducted 29 inservice education programs involving well over 2,500 people. Each of these offerings has involved coordination between the educational institutions and some other agency. Hospitals, industry, public health departments, public schools, mental health centers, and citizen groups were mentioned most often as consumers of these programs. None of this activity involved health personnel in the Albemarle Area, despite the fact that all of it was conducted in counties immediately adjacent to the area.

A lack of facilities and materials at the five responding institutions hardly seems to be a problem. They reported a total of 41 space units (classrooms, conference rooms, libraries, and cafeterias) with a

combined capacity of nearly 4,000 people, all of which could be made available for shared usage with advance scheduling. All reported having at least minimally adequate material for their own purposes, and most have lists of on-board audio-visual aids and publications which could be made available to other institutions.

In summary, it appears a wide variety of preservice health education programs are available to students of the Albemarle. The extent of utilization of those programs is, unfortunately, unknown. The extensive inservice activities occurring in at least five of 12 institutions in counties immediately outside the area do not appear to have significant impact in the area proper. While East Carolina University is an exception because of its extension courses in the Albemarle Area, data from that institution were not available for study.

Finally, the peculiar inability of the area to take advantage of what could be described as a flurry of inservice and preservice health education activity immediately outside its borders is apparently not due to a lack of materials and facilities at those institutions. Rather, it can probably be ascribed to the unique geography of the area, its low economic status, lack of express highways, and problems of communication and coordination associated with the crossing of political boundaries. Moreover, a high level of educational activity of any type can hardly be expected in an area of over 3,000 square miles, encompassing nearly 100,000 people served by only one small state university and one community college.

Other Health Education

The Agricultural Extension Service was found through a telephone interview to provide four separate health-related services to the area: a nutrition aide program to disseminate basic nutrition information to families; a 4-H health program; adult health education (including hygiene, cancer education, foods and nutrition, etc.), and day care for disadvantaged children. Throughout the area, 14 people are currently serving as nutrition aides. Each aide received 16 lessons on nutrition and on working with people before going into the field, and each is subject to periodic inservice education sessions. Nutrition aide training is conducted by a home economics specialist; inservice education is also provided for some 18 volunteers who serve the extension service in various capacities.

Materials which come mostly from the State Board of Health, U. S. Department of Agriculture, and North Carolina State University are reportedly adequate. The extension service has a conference room with a capacity of 10 to 12 persons which could be made available to other organizations or groups.

Coordination Activities for Inservice Education (All Agencies)

In order to make viable plans for inservice health education programs which effectively utilize area resources, it is necessary for the planning agency to know the number, nature, and location of these resources for education. The final section of each of the various agency questionnaires attempted to determine the extent to which the

agencies were aware of possibilities for coordinated education programs and, further, the extent to which they had actually been involved with other agencies or groups.

The coordination activities for educational services listed by the hospitals in the area will be noted first, followed by public health departments, mental health agencies, social service agencies, and educational institutions. Of the five agencies, educational institutions reported the greatest number and variety of educational programs involving coordination of other agencies and groups. The activities will not be presented in this report, however, because none of the five responding institutions was involved in coordinated programs with agencies inside the Albemarle Area.

Hospitals

The four hospitals in the Albemarle Area provide inservice education in conjunction with the following agencies and groups for the purposes listed:

Name of Organization	For What Purpose
Other hospitals	Supervisory management and planning Management and nursing
Community colleges	Supervisory management and planning Beaufort Tech--training nurses aides Management and nursing
Industry	Supervisory management and planning
Public health agencies	Supervisory management and planning
Mental health programs	Supervisory management and planning
Local physicians, nurses, dentists' associations	Supervisory management and planning Specific problem areas--first aid, CCU, CPR and coronary care

Name of Organization	For What Purpose
Nursing homes, rescue squads	One occasion--met with hospital personnel Training in CPR Supervisory management and planning
N. C. Heart Association	CPR training

Two hospitals suggested that more coordination and cooperation of all types among the hospitals and other agencies would be desirable, particularly in the areas of emergency medical services, medical continuing education programs, nursing education programs, and management education programs.

Public Health Departments

As mentioned earlier, except for educational institutions outside the area, public health departments led all other agencies in both the variety of other agencies with which they were involved during the past year and the frequency of involvement with these agencies. Coordination efforts for inservice education by public health departments and the purposes for these efforts are listed below.

Institutions	For What Purposes
Hospitals	Home health services Health director attends medical staff meetings
Individual physicians or nurses	Home health services Health director attends medical staff meetings
Mental health programs	Conferences Tideland Mental Health Center and nursing staff Public health nurse on evaluation committee

Institutions	For What Purposes
Vocational Rehabilitation	Referrals and follow-up
Social Services	Referrals and follow-up Family planning, supplemental food program
Department of Public Instruction	Health talks in schools, etc. School Nurse
Community colleges	Assist in programs
Other community health-related organizations--Economic Improvement Council	Family planning and home health services

Several of the public health agencies suggested the desirability of more coordination with the mental health clinics, although that coordination was already considerable. They also suggested that a monthly meeting with the Rural Development Panel might be the best established avenue of getting more coordination efforts initiated.

Mental Health Agencies

The following instances of coordinated educational activities among mental health agencies and other agencies during the past year and the purposes of these activities are listed below. None of the responding mental health agencies suggested additional avenues of future coordination.

Institutions	For What Purposes
Private general hospitals	Co-sponsorship of staff training related to patient care
Regional mental hospitals	Exchange of staff for continuity of care
Department of Public Instruction	Co-sponsorship of staff training in diagnosis and referral

Institutions	For What Purposes
Community colleges/ technical schools	Psychiatrist conducting inservice training for teachers
Colleges and universities	East Carolina University--registered nurse field placement Beaufort Technical Institute--registered nurse field placement East Carolina University--Vocational rehabilitation field placement
Regional alcohol rehabilitation center	Exchange of staff for continuity of care

Social Service Agencies

Although social service agencies were not asked directly what other agencies were involved with them for the purposes of inservice education, they were asked to list other agencies with which they shared material, facilities, or equipment. Responses by social service agencies to this question were limited to shared facilities with public schools and with public health departments. A "rap" session involving all county service agencies on a monthly basis was suggested as a possible way of establishing increased communication and coordination among the various agencies.

Educational Institutions

As indicated earlier, five of the educational institutions were outside the Albemarle Area. Although they listed by far the most varied and frequent contacts with other agencies, these were not included in this report because none of the other agencies listed was located in the Albemarle Area.

Suggested areas where more coordination could take place in the future were social service agencies, the Employment Security Commission,

local obstetricians and their patients (for maternity classes taught by nursing students), and more referrals from local physicians.

Summary

All efforts at coordination for educational purposes reported for each agency group during the past year have been listed, with the exception noted above. Not only was the list short, but the frequency of coordination attempts was small. With the exception of some of those reported by public health agencies which occurred as many as four times, all contacts occurred once. It appears that while each agency is reasonably aware of the others, the number of jointly coordinated programs in the area per year is minimal.

CHAPTER V

CHARACTERISTICS AND EDUCATION NEEDS: PERCEPTIONS OF HEALTH WORKERS

The data reported in this chapter were obtained through the use of the Health Worker Questionnaire. The questionnaire had two purposes: to determine certain selected characteristics of the health workers in the area, and to determine their perception of their own inservice continuing education needs.

Information gathered was processed as indicated earlier in the chapter on methodology, and the results are reported under two major headings as follows.

Characteristics of Health Workers

Distribution and Response

As can be seen in Table 10, 1125 health worker questionnaires were distributed to the health workers in ten agency categories. Discrepancies between the numbers of questionnaires delivered and the approximate number of health workers not explained by comments in Table 10 were accounted for through returned, unused questionnaires or follow-up telephone calls to agencies. There is reason to suspect that the total figure representing the approximate number of health workers (815) may be high. The Comprehensive Health Planning Survey discussed in the introduction to this paper indicates a total of 717 health workers, excluding health professionals and certain other workers in health settings who performed work not directly related to

Table 10. Health Worker Questionnaire Response Figures

Agency	Questionnaires Delivered	Approximate Number of Health Workers	Questionnaires Returned	Comments
Economic Improvement Council	16	16	11	
Professional offices, clinics and medical centers	154	81	42	Each professional office (73) was sent one extra questionnaire
Hospitals	713	498	163	Hospital administrators reported 498 actual employees not including doctors
Mental health clinics	27	27	8	
Boarding homes	16	16	3	
Pharmacies	31	25	[illegible]	
Public health agencies	63	60	26	
Social service agencies	93	84	16	
School nurses	11	5	2	
Department of Agriculture and industry	1	3	3	Copies were made of original questionnaire
TOTAL	1125	815	293	

health care. An example of one of these other workers might be a laundry employee in a hospital whose job duties are no different from laundry workers in other workplaces. They were included in this study because their workplace was a health setting. Such individuals were not included in the Comprehensive Health Planning Study. The actual number of health workers as defined by this study in the Albemarle Area lies somewhere between the two figures indicated, but closer to 815.

The percentage of return of the health worker questionnaire varies according to the base chosen to express it. Based on the total number of questionnaires delivered (1,125), the percentage of return was 26.0. Based on the approximate number of health workers (815), which may also be somewhat high, the percentage is 36.0. Based on the number of health workers identified by the Comprehensive Health Planning Study, the percentage of return is 41.0. The true rate of return is probably around 40 percent.

Health Worker Sex, Age, and Education

The sex distribution of the health worker respondents in this study was heavily female, as can be seen from Table 11. There is no

Table 11. Sex Distribution of Health Worker Respondents

Sex	Number	Percentage
Female	238	81.2
Male	46	15.7
Blank	9	3.1
TOTAL	293	100.0

reason to suspect that the sex of the health worker respondents in this study varies significantly from the true sex distribution of health workers in the Albemarle universe. Nine individuals did not indicate their sex.

Table 12 indicates the age by education distribution of the health worker respondents. Nearly one-fourth of this group were under 25 years of age. One-half were under 35, and nearly three-fourths were under 45. Health worker respondents in the Albemarle Area appear to be somewhat younger than health workers in general or individuals in other occupations. Roughly one-half had some type of certificate, diploma, or degree other than a high school diploma; another one-fourth are high school graduates but have no other formal training; and only about 15 percent are not high school graduates. The latter figure includes a number of part-time high school student workers.

Health Worker Occupational Groups and Related Data

The wide range of occupations reported by the health worker respondents can be seen in Table 13. The respondents represented 77 different occupational titles. Since this large number of occupations was too unwieldy for the establishment of two-way tables involving occupations versus other factors, somewhat arbitrary groupings of occupations were set up. The 77 occupations were placed into eight categories as shown in Table 14. No occupational relationship among the position titles is, however, implied in the miscellaneous category. Original data by individuals have been preserved, although not included herein.

The number of health worker respondents in each of these eight occupational groupings is presented in Table 15. This table also

Table 12. Age by Education Distribution of Health Worker Respondents

Age Group	Some High School or Less	High School Graduate	Some College	Certificate, Diploma or Degree	Number in Group	Percentage in Group
16-25	4	17	10	38	69	24.0
26-35	6	14	11	43	74	25.7
36-45	16	20	6	26	68	23.6
46-55	11	13	4	21	49	17.0
56-90	7	2	3	14	26	9.0
Blank	1	1	0	0	2	.7
TOTAL	45	67	34	142	288*	100.0
PERCENTAGE TOTAL	15.6	23.2	11.8	49.3	100.0	

*Five workers did not indicate their educational level and, thus, do not appear in the table.

Table 13. Occupations Indicated by Health Workers

01	Admitting and insurance clerk
02	Porter
03	Housekeeper
04	Nurse (supervisor)
05	X-ray technician
06	Lab technician
07	Director of nursing
08	Practical nurse, ward secretary
09	Nurse (OB surgical)
10	P.T. dietary helper
11	Nurse (LPN)
12	Orderly
13	Director of inservice education
14	Assistant bookkeeper
15	Administrative secretary
16	Nurse (OR)
17	Station secretary
18	Assistant nurse
19	Radiologic technologist (chief)
20	Receptionist and ward clerk
21	Electrician
22	Medicare clerk
23	Maintenance supervisor
24	Chief respiratory therapist
25	Purchasing clerk
26	Plumber
27	Consultant physical therapist
28	Pharmacist
29	Linen and maid supervisor
30	Medical records librarian
31	Family planning aide
32	Supervisor
33	Coordinator for CPC
34	General secretary
35	Dental assistant
36	Public health nurse
37	Typist
38	Health director
39	T.B. project nurse
40	Accounting clerk
41	Social worker
42	Home health aide
43	Sanitarian
44	Clerk
45	Ophthalmologist assistant
46	Nurse (RN)
47	Registered dental hygienist
48	Doctor of optometry
49	Medical assistant/doctor's assistant
50	Stenographer
51	Cook
52	Counselor
53	Alcoholism education specialist
54	Psychiatric social worker supervisor
55	Mental health therapist
56	Alcoholism counselor trainee
57	Psychologist
58	Eligibility specialist
59	*
60	*
61	Administrator
62	Credit manager
63	Insurance manager
64	Tray girl
65	Ironer
66	Pot and dish washer
67	Security officer
68	Microfilm clerk
69	Medical transcriptionist
70	Chief anesthetist
71	Switchboard operator
72	Assistant dietary manager
73	Cytotechnologist
74	Histologist
75	Food supervisor
76	Secretary's assistant
77	Lab helper
78	Veterinarian
79	School nurse
99	Blank

*Omitted because of duplication.

Table 14. Health Worker Occupational Groups

Group I - Nurses, Supervisors and Assistants

04 Nurse supervisor
07 Director of nursing
08 Practical nurse, ward secretary
09 Nurse (OB surgical)
11 L.P.N.
16 Nurse (OR)
18 Assistant nurse
36 Public health nurse
46 Nurse (RN-N.O.C.)
79 School nurse
70 Chief anesthetist
39 T.B. project nurse

Group II - Medical, Laboratory, Dental and X-ray Supervisors, Technicians and Assistants

05 X-ray technician
06 Lab technician
19 Radiologic technologist (chief)
73 Cytotechnologist
74 Histologist
77 Lab helper
35 Dental assistant
45 Ophthalmologist assistant
47 Registered dental hygienist
49 Medical assistant

Group III - Management and Clerical Personnel

01 Admitting and insurance clerk
14 Assistant bookkeeper
15 Administrative secretary
17 Station secretary
20 Receptionist and ward clerk
22 Medicare clerk
25 Purchasing clerk
30 Medical records librarian
34 General secretary
37 Typist
40 Accounting clerk
44 Clerk (general)
50 Stenographer
51 Eligibility specialist
61 Administrator (hospital)
62 Credit manager
63 Insurance manager
68 Microfilm clerk
69 Medical transcriptionist
71 Switchboard operator
76 Secretary's assistant
13 Director of inservice education
32 Supervisor
72 Assistant dietary manager
38 Health director

Table 14. (continued)

Group IV - Auxiliary Services (food, maintenance, laundry, security)

02 Porter
03 Housekeeper
10 Dietary helper (part-time)
12 Orderly
21 Electrician
23 Maintenance supervisor
26 Plumber
29 Linen and maid supervisor
51 Cook
64 Tray girl
65 Ironer
66 Pot and dish washer
67 Security officer
43 Sanitarian
75 Food supervisor

Group V - Therapists (physical health)

24 Chief respiratory therapist
27 Consulting physical therapist

Group VI - Therapist (Mental Health) and Support Personnel

41 Social worker
52 Counselor
53 Alcoholism education specialist
54 Psychiatric social worker
55 Mental health therapist (supervisor)
56 Alcoholism counselor trainee
57 Psychologist

Group VII - Family Planning Personnel

31 Family planning aide
33 Coordinator for CPC

Group VIII - Miscellaneous

42 Home health aide
28 Pharmacist
48 Doctor of optometry
78 Veterinarian

Table 15. Health Worker Respondents by Occupational Groups

Group	Number of Respondents	Respondents in Group as Percentage of Total
Nurses, Supervisors, and Assistants	79	27.0
Medical Laboratory, Dental and X-ray Supervisors, Technicians and Assistants	48	16.4
Management and Clerical Personnel	70	23.9
Auxiliary Services	47	16.0
Therapists (Physical Health)	3	1.0
Therapists (Mental Health) and Support Personnel	13	4.4
Family Planning Personnel	10	3.4
Miscellaneous	20	6.8
Blank	3	1.0
TOTAL	293	100.0

indicates the percentage of the total number of respondents accounted for by each occupational group.

Comparisons between the number of respondents in each group and the representation of each group as a part of the total universe for each of the six groups on which data are available indicate that Group I (Nurses, Supervisors, and Assistants) is seriously underrepresented in the sample while Group II (Medical, Laboratory, Dental, and X-ray Supervisors, Technicians and Assistants) is considerably underrepresented. The remaining four groups are represented in the sample roughly according to their distribution in the universe of health workers in the

Albemarle Area. Accordingly, caution should be exercised when generalizing from the results of the present study to the entire population of health workers.

Although, as indicated earlier, 77 position titles for health workers were represented in the survey, all came from only 13 different workplaces, as illustrated by Table 16. As might be expected, the vast majority (163) of the 293 health workers were employed by hospitals (Table 10). This is true of both the sample and the total population of health workers in the Albemarle Area as well as elsewhere.

Table 16. Place of Employment of Health Worker Respondents

Hospital	Mental Health Office
Economic Improvement Council	Medical Center
Dentist's Office	Pharmacy
Health Department	Department of Agriculture (Lab)
Social Services	County School System
Doctor's Office	Clinic
Rest Home	Blank

Table 17 indicates the educational credentials held by the respondents. Significantly, nearly one-half of the group had no professional credentials of any kind, though they may have been high school graduates.

One medical doctor, one veterinarian, and two doctors of optometry, comprising 1.3 percent of the total, responded to the Health Worker Questionnaire in error. Such individuals were asked to respond only to the Professionals and Employers Questionnaire.

The academic degree-holders (bachelor's and master's) included administrators, social workers, psychologists, and a few nurses. The small number of persons in the sample holding associate degrees is inexplicable.

Table 17. Educational Credentials of Health Worker Respondents

Degree	Absolute Frequency	Frequency As Percentage Of Total Respondents	Frequency As Percentage Of Degree-Holders
Medical Doctor	1	.3	.6
D.V.M.	1	.3	.6
Master's Degree	7	2.4	4.5
Doctor of Optometry	2	.7	1.3
Bachelor's Degree	27	9.2	17.3
Registered Nurse	35	11.9	22.4
Registered Pharmacist	4	1.4	2.6
Radiologic Technician	12	4.1	7.7
Associate Degree	3	1.0	1.9
Certified Lab Technician	10	3.4	6.4
L.P.N.	33	11.3	21.2
Not Health-Related	21	7.2	13.5
No Degree	137	46.8	
Total	293	100.0	100.0

Health Worker Working Hours

As Table 18 indicates, more than two-thirds of the respondents worked a standard 40-hour week. However, an indeterminate number of them may also be on emergency call at other times, resulting sporadically in work weeks of somewhat more than 40 hours. Fewer than seven percent regularly work more than 40 hours per week. Nearly one-quarter of the respondents reported that they were employed part-time. The majority of this group worked between 20 and 39 hours.

Table 18. Weekly Work Hours of Health Worker Respondents

Hours	Absolute Frequency	Relative Frequency Percentage
Blank (work hours not given)	10	3.4
Half-time or less (0-20 hours)	14	4.8
Greater than half-time but less than full-time (21-39 hours)	52	17.7
Full-time (plus call) (40 hours)	198	67.6
41 to 90 hours	19	6.5
Total	293	100.0

Inservice Education Needs of Health Workers

The 293 respondents to the Health Worker Questionnaire indicated a total of 173 separate specific needs for inservice education. Because the large number of needs was unwieldy and difficult to deal with, the needs were classified into 20 content-related groups.

Table 19 presents the 173 needs by content group. The P and F columns indicate the priority assigned to each need by the respondents and the frequency of mention of each need, respectively. For example, the 15 in the F column opposite need 001 "Better Education" in Group 1 means that 15 respondents thought they had a need for more general education.

Each frequency score was multiplied by three if the respondent indicated that need to be of first priority, by two if the need was of second priority, and by one if it was of third priority. Needs listed lower than priority three do not affect the priority score. Thus, in the example above, it can be seen that need 001 was a high priority need

Table 19. Health Worker Inservice Education Needs by Group, Frequency and Priority

Group I--More Academic Education

P	F		
42	15	001	Better education
23	9	006	Degree in own field
3	1	056	More chemistry
4	2	057	More algebra
2	2	058	More biology
3	2	059	More English and foreign language
7	3	081	Training in speech and public speaking
14	8	089	Psychology
4	2	092	Sociology
1	2	093	Anatomy
0	1	108	Statistics
2	1	115	Micro-biology
5	2	152	Spelling
110	50		

Group II--Improved Management Techniques

17	7	003	How to be a good supervisor
5	3	018	How to get others to do their share of work (cooperate)
17	6	019	Planning
2	1	020	Controlling
12	7	021	Communication
4	3	022	Organizing
0	1	023	Standards and appraisals
3	6	024	Motivation (interest, vitality)
0	1	025	Decision-making
1	2	032	Dynamics of leadership
6	3	052	Cooperation among departments
10	4	053	Management planning courses
6	3	066	Education in Medicare/Medicaid
8	3	067	Education in money management
3	1	073	Education in personnel matters
9	5	087	Administrative management
3	2	088	Public relations
2	2	098	Policies
3	1	103	Assessing health needs
2	1	104	Utilization of health personnel
4	4	105	Legalities re: deliverance of health services
1	1	107	Budget preparation
2	1	143	Program evaluation
2	2	166	Convalescent supplies usage
122	70		

Table 19. (continued)

Group III--Improved Office Knowledge and Skills, Record-keeping and Interpretation

P	F		
8	3	035	More knowledge of bookkeeping system
10	4	036	More knowledge of insurance area
4	3	085	More knowledge of filing
19	9	091	Secretarial training
3	2	079	How to type
5	3	084	How to operate audio-visual equipment
1	1	009	Interpretations of chemical reports
1	1	072	Charting
4	3	076	Functions of medical records department
3	1	151	How to get people to pay doctor bills
35	13	160	Medical terminology
93	43		

Group IV--Improved Staff/Patient Relationships and Communications

1	2	049	Patient/nurse relationships
7	3	083	How to work with teenagers
2	1	100	Help patients beyond hospital care (aftercare)
6	3	129	How to deal with pediatric patients
8	4	137	Interview techniques
6	2	145	Discipline problems of school-age children
3	1	153	How to take care of male patient
0	1	158	Course in sign language
0	1	033	Psychological needs of terminal patient
3	2	139	More information about geriatrics and dealing with geriatric patients
36	20		

Group V--Improved Knowledge of OB/GYN, Maternity, Nursery Care

2	2	008	Delivery room techniques
0	3	014	Oxygen analysis in nursery
8	6	015	Maternity--more knowledge about OB in general
5	3	016	Know more about gynecology
0	1	039	Newborn nursery
3	1	121	Heart sounds in pediatric physicals
5	2	122	Pap smear preparations
3	1	096	Congenital birth defects information
26	19		

Table 19. (continued)

P	F		
			Group VI--Improved Knowledge of ER Techniques and First Aid
29	13	012	ER knowledge
3	1	030	Emergency situations when doctor is not available
2	1	031	Review of resuscitative measures
3	2	046	Burn treatment
3	3	062	Diabetic coma and insulin shock information
1	1	070	Athletic injuries
3	1	074	What to do in emergency situations (fire, etc.)
1	1	111	Artificial respiration techniques
11	6	131	First aid courses
3	1	060	CPR
59	30		
			Group VII--More Information About Family Planning, Sex Education, V.D.
7	3	086	Family planning information
1	2	099	V.D. cases (detection and control)
3	2	101	Family planning in high schools
2	1	106	Genetic counseling
13	8		
			Group VIII--More Information About Alcoholism and Drug Use and Abuse
22	12	063	Drug use and abuse
3	5	102	Help with the alcohol problem
25	17		
			Group IX--More Information About Coronary Care
8	6	010	EKG information
7	4	011	Defibrillator information
16	7	037	More about a coronary care unit in hospital
28	15	038	Care for heart patients in general
3	2	048	Therapy for stroke patients
2	1	148	How to take blood pressures
3	1	164	How to read monitors
67	36		

Table 19. (continued)

Group X--Increased Knowledge of Pharmacology

P	F		
28	12	027	More information in pharmacology
4	2	071	More information about medications
3	1	124	Drugs in eye care (what types)
11	4	165	Drug interactions
46	19		

Group XI--More Information About Pathology, Specific Diseases and Etiology

6	2	004	Abnormal hematology
4	2	005	General clinical pathology information
3	1	041	Refresher course in clinical lab
17	7	042	Abnormal test to specific disease (relation) (lab diagnosis)
8	3	044	Respiratory diseases and emphysema
0	1	045	Diabetes mellitus
3	2	109	Cancer detection and control
2	1	114	Disease transmission
37	17	127	Information about lab work and techniques
2	1	173	Etiology
82	37		

Group XII--More Information About Therapeutic Procedures

6	2	007	Therapy concerning post-operative care and injuries
6	3	013	Operating room procedures
6	5	028	Instruction in handling and caring for "traction" patients
2	1	029	Inhalation therapy
1	2	034	Care of tracheotomy patients
18	13	040	Refresher course in X-ray techniques
0	2	043	More about surgery in general
1	1	054	Knowledge of new radiology techniques
19	8	061	Chemotherapy
0	1	064	IPPB therapy
2	1	068	Experience with respiratory cases
4	2	069	Prosthetic training and orthodontics
2	1	075	Intensive care unit in hospital
4	2	094	Information on different dental procedures

Table 19. (continued)

P	F		
2	1	095	Preparing dental materials
3	2	110	Catheter insertion and change
1	2	112	Physical therapy
0	2	154	More about oxygen and oxygen therapy
2	3	159	Nuclear medicine
3	2	161	Sterile techniques
2	1	163	Chest tube drainage information
5	2	170	Ostomy care
89	59		

Group XIII--Consumer Health Education and Preventive Medicine

7	3	065	More education in public health
18	7	077	More training in entire health field
2	1	097	School health programs
3	1	134	Preventive medicine
2	1	135	More rounded program
5	2	128	How to educate public in oral hygiene
0	1	172	Telephone diagnosis
37	16		

Group XIV--More Information About Mental Health Including Practices and Procedures

17	10	047	Mental health in general
12	6	082	Training in counseling
10	5	090	Behavior modification
1	1	132	Training in personality disorders
2	2	133	Psychosis and neurosis
1	2	136	Group therapy
3	1	140	Group therapy with children
2	1	141	Group therapy with parents of problem children
48	28		

Group XV--Dietary and Housekeeping

12	7	017	More about diets and how to prepare them
2	1	055	Types of linens and how to fold them
9	4	113	Food handling practices
23	12		

Table 19. (continued)

Group XVI--Environment/Ecology

P	F		
1	1	116	Chemical analysis of water
0	1	117	Sewage treatment plants
0	1	118	Soil studies
0	1	119	Air pollution
0	1	120	Shellfish sanitation
1	5		

Group XVII--Information About Equipment, Services and Facilities

2	2	051	Better equipment in hospital (stethoscopes, etc.)
0	1	080	Information on doctors' instruments
2	1	142	Facilities for mentally ill (halfway house, hospitals, day care)
1	1	150	How to set up a better chemistry lab
1	2	155	Blood banking information
5	2	169	Surgical appliances
1	1	171	Computerized medicine
12	10		

Group XVIII--More Knowledge of the Law

2	1	156	Basic state laws for minor offenses
1	1	157	Courses in police work
1	1	168	School law classes
4	3		

Group XIX--Personnel Problems/Working Conditions

69	29	002	How can I do my job better?
2	2	050	Nurses raise?
4	2	123	No opportunity for advancement in position
1	1	146	Aid in transportation
0	1	147	Increase in cost for transportation
3	1	149	Work more hours
2	1	162	Shortage of help
81	37		

Table 19. (continued)

Group XX--Miscellaneous

P	F		
3	1	026	Up-to-date information on nursing field
5	2	078	More information about nursing
3	2	125	Physical and physiological problems of patients with eye disorders
2	1	130	More development at vision
3	3	138	Current literature
0	1	144	Interagency swap of information
3	1	167	Refresher courses on medical subjects and environmental sciences and related fields
19	11		

among the 15 individuals who listed it. Had all rated it priority one, the combined P score would have been 45. Actually, 13 respondents ranked it priority one, one ranked it priority two, and one priority three, resulting in a score of 42.

All needs are listed individually (ungrouped) by need number in Appendix B. From that listing, which includes frequency counts spread across ranking columns, it is possible to ascertain exactly how each priority score was determined. Some needs may have been listed by several respondents and still have received a priority score of zero because none of the respondents ranked them as one of their top three needs.

Table 20 is a listing of the 20 need groups in order of the combined frequency of mention of each of the needs included in that group. Table 21 contains a similar listing of the need groups in order of combined priorities. Table 22 points up the similarity of the two rankings.

Table 20. Need Groups in Order of Frequency

Group Number	Group Title	Frequency
II	Improved management techniques	70
XII	More information about therapeutic procedures	59
I	More academic education	50
III	Improved office knowledge and skills, record-keeping and interpretation	43
XI	More information about pathology and specific diseases and etiology	37
XIX	Personnel problems/working conditions	37
IX	More information about coronary care	36
VI	Improved knowledge about emergency room techniques and first aid	30
XIV	More information about mental health including practices and procedures	28
IV	Improved staff/patient relationships and communication	20
X	Increased knowledge of pharmacology	19
V	Improved knowledge of OB/GYN, maternity	19
VIII	More information about alcoholism and drug use and abuse	17
XIII	Consumer health education and preventive medicine	16
XV	Dietary and housekeeping	12
XX	Miscellaneous	11
XVII	Information about equipment, services and facilities	10
VII	More information about family planning, venereal disease, etc.	8
XVI	Environment/ecology	5
XVIII	More knowledge of the law	3

Table 21. Need Groups in Order of Priority

Group Number	Group Title	Priority Score
II	Improved management techniques	122
I	More academic education	110
III	Improved office knowledge and skills--record-keeping and interpretation	93
XII	More information about therapeutic procedures	89
XIX	Personnel problems/working conditions	81
XI	More information about pathology and specific diseases, etiology	81
IX	More information about coronary care	67
VI	Improved knowledge of emergency room techniques and first aid	59
XIV	More information about mental health including practices and procedures	48
X	Increased knowledge of pharmacology	46
XIII	Consumer health education and preventive medicine	37
IV	Improved staff/patient relationships and communication	36
V	Improved knowledge of OB/GYN, maternity	26
VIII	More information about alcoholism, drug use and abuse	25
XV	Dietary and housekeeping	23
XX	Miscellaneous	19
VII	More information about family planning, venereal disease, etc.	13
XVII	Information about equipment, services and facilities	12
XVIII	More knowledge of the law	4
XVI	Environment/ecology	1

Table 22. Comparative Rankings of Need Groups (by Number) in Order of Priority and Frequency

Priority	Frequency
2	2
1	12
3	1
12	3
19	11
11	19
9	9
6	6
14	14
10	4
13	10
4	5
5	8
8	13
15	15
20	20
7	17
17	7
18	16
16	18

The top nine groups are the same on both lists. Even differences in the order of the groups are not large.

A cursory examination of the Health Worker Questionnaire seems to lend support to the notion that respondents, for the most part, tended to list their needs in order of priority without being asked. This probably accounts for the similarities between the two lists.

One disadvantage associated with classifying the needs into groups is the possibility that there might be a need for a program which could meet selected high-priority needs across several groups. Such a program might be overlooked in shifting the emphasis to the need groups. For this reason, the top 50 needs in order of priority and without regard to group have been listed in Table 23.

Although respondents were asked to list specific needs and most did, the two highest priority needs were general. Need 002 was a difficult one to classify. It seemed to be a plea from persons in lower-level positions for more on-the-job training from their immediate supervisors. These individuals seemed to be looking simply for help in finding ways to perform their jobs better. There is no evidence to imply that they were looking either toward advancement or toward formal inservice education programs. Interestingly, need 003, in 14th place, was a complementary plea from the supervisors for information on how they could become better supervisors. Need 001, in second place, reflects a universal concern for more and better education of all types.

In all cases the needs were listed in language which followed as closely as possible the original working used by the respondents on the questionnaires. Changes were made only when there was a danger that the

Table 23. Top Fifty Needs by Priority

Rank	Priority Score	Need Number	Need
1	69	002	How can he better his job situation
2	42	001	Better education
3	37	127	Information about lab work and techniques
4	35	160	Medical terminology
5	29	012	Emergency room knowledge
6	28	038	Care for heart patients in general
7	28	027	More information in pharmacology
8	23	006	Degree in own field
9	22	063	Drug use and abuse
10	19	061	Chemotherapy
11	19	091	Secretarial training
12	18	077	More training in entire health field
13	18	040	X-ray techniques (refresher course)
14	17	003	How to be a good supervisor
15	17	019	Planning
16	17	047	Mental health in general
17	17	042	Abnormal test to specific disease
18	16	037	More about coronary care unit in hospital
19	14	089	Psychology
20	12	021	Communication
21	12	082	Training in counseling
22	12	017	More about diets and how to prepare them
23	11	131	First aid courses
24	11	165	Drug interactions
25	10	090	Behavior modification
26	10	036	Understand more about insurance
27	10	053	Management planning courses
28	9	113	Food handling practices
29	9	087	Administrative management
30	8	044	Respiratory diseases and emphysema
31	8	015	Maternity, OB in general
32	8	067	Education in money management
33	8	137	Interview techniques
34	8	010	EKG information
35	8	035	Understand more about bookkeeping system
36	7	065	More education in public health
37	7	086	Family planning information
38	7	011	Defibrillator information
39	7	081	Training in speech and public speaking
40	7	083	How to work with teenagers
41	6	052	Cooperation among departments
42	6	145	Discipline problems of school-age child

Table 23. (continued)

Rank	Priority Score	Need Number	Need
43	6	004	Abnormal hematology
44	6	007	Therapy concerning post-operative and injury
45	6	013	Operating procedures
46	6	028	Instruction in "traction"
47	6	066	Education in Medicare and Medicaid
48	6	129	Deal with pediatric patients
49	5	169	Surgical appliances
50	5	170	Ostomy care

intent of the respondent might be construed as ambiguous or when several individuals expressed exactly the same need in different words. In the latter case, the wording of the respondent who had expressed the need most clearly was selected.

Cross Tabulation of Health Worker Need Groups by Workplace

As has been indicated in an earlier section, various two-way tables were constructed in an effort to determine if relationships existed between various characteristics of health worker respondents and their needs. Some of these distributions have been treated previously (age by education, etc.). Two others will be discussed here.

A cross tabulation of frequency of mention of the various need groups by health workers in each of 12 workplaces is included in Table 24. The basic purpose of this distribution was to determine whether or not need groups were a function of workplace. The implications are obvious: If certain worker needs are peculiar to certain workplaces, then programs for those workers need only be offered in those

Table 24. Frequency of Mention of Need Groups by Priority (1-3) as a Function of Workplace--Health Workers

Need Group	Workplace																				
	Hospital			E.I.C.			Dentist Office			Health Dept.			Social Service			Doctor Office			Rest Home		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education	18	3	3	4	2	2				1	2	2				1	1	1			
Improved Management	14	10	5	1	3	1		1	1	4	3	4	2	1			3	1			
Office Knowledge	10	6	3		2	2				1	4	1		1		6	2	1			
Staff-Patient Relationship	1	1	2			1			1	1	1		2			2					
OB-GYN Knowledge	2	4	1							3	1										
Emergency Room Techniques	9	3	5									1				4	2	1			
Family Planning				1						2	1	2									
Alcohol and Drug	1		1							2	2	2				2	1				
Coronary Information	9	10	6													2	2	1			
Pharmacology	2	2	1													4	2	1			
Pathology	13	5	3							1	1					1	3				
Therapeutic Information	9	13	9				2	1			1		1			1		2			
Health Education	1			2			1	1		1	1		1								
Mental Health Practices	3	4		1	1	1					2			2			1				
Dietary and Housekeeping	3	3	2							2											
Environment/Ecology												1									
Equipment, Services and Facilities		1	1																		
Knowledge of Law		1	1																		
Personnel Problems	12	6								3	1	2	1		1	3		1	1		
Miscellaneous	1			1	1					1		1					2				

Table 24. (continued)

Need Group	Workplace											
	Mental Health Agency			Medical Center			Pharmacy			County School		
	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education	1	1		1						1		
Improved Management	1					2						
Office Knowledge				1	1							
Staff-Patient Relationship	1			1								
OB-GYN Knowledge												
Emergency Room Techniques				1								
Family Planning												
Alcohol and Drug	2		1									
Coronary Information												
Pharmacology							6	3				
Pathology	1			1					1			
Therapeutic Information	1	1				1	1	1			1	
Health Education	1	1	2	1						1		
Mental Health Practices	1	3	3									
Dietary and Housekeeping												
Environment/Ecology												
Equipment, Services and Facilities		1				1	1	1				
Knowledge of Law											1	
Personnel Problems				1								
Miscellaneous												

workplaces. Further, it would seem to be helpful to management personnel in planning programs for their various workplaces to know which need groups are most applicable to their personnel.

Table 24 should be interpreted with caution. Because of unequal numbers of respondents from the various workplaces, the frequency numbers inside the table are only comparable within the vertical workplace columns, not across columns. For example, 18 hospital workers listed academic education as a first priority need, while only four E.I.C. workers did likewise. This does not necessarily mean that academic education is a greater need among hospital workers than among E.I.C. workers, simply because many more hospital workers were included in the survey. It does mean, however, that academic education was listed as a first priority need more times than any other group by both hospital workers and E.I.C. workers.

By multiplying each frequency in the priority one column for each workplace by three, the priority two column by two, and the priority three column by one and summing the results, a single priority score for each need group at each workplace can be determined. In this manner, academic education, with a score of 63 [(18 x 3) + (3 x 2) + (3 x 1) = 63], is not the number one concern of hospital worker respondents. The number one priority, with a score of 67 [Group 2 -- (14 x 3) + (10 x 2) + (5 x 1) = 67], is improvement of management techniques. Implications of these data will be discussed in a later section.

Cross Tabulation of Health Worker Need Groups by Position Title

Table 25 is a listing of the frequency of mention by priority (1-3) of each of the 20 need groups for 65 position titles. This distribution was constructed in order to see what relationships existed between need groups and position titles. If certain need groups apply to only certain position titles, programs designed to meet the needs in those groups possibly need to include only those position titles. Judgments regarding the total number of needs listed by any position title must be made with great care. The number of needs for each position title is as much a function of the number of respondents in that position title as it is of the number of needs listed by individuals.

Sixty-five position titles are included in the table rather than the total of 79 because individuals representing 14 titles listed no needs at all. Of those listing needs, some listed only one and some only two. Some listed many more than three. Any needs beyond priority three were not included in the table.

Using admitting and insurance clerks as an example, it can be seen from Table 25 that four individuals in this position title listed need groups one, two, three, and 19 as first priority needs. Groups two and three were listed as second priority needs by one individual each. No admitting and insurance clerk listed a third-order need. Applying the same method of priority designation used for the previous table, it can be concluded that the most important concerns of admitting and insurance clerk respondents are group III - Improved Office Knowledge and Skills, Record-Keeping and Interpretation, and group II - Improved

Management Techniques. Implications of the information in Table 25 are discussed in a later section of this report.

Table 25. Frequency of Mention of Need Groups by Priority (1-3) as a Function of Position Title

Need Group	Admitting Insurance Clerk			Porter			House-keeper			Nurse Super-visor			X-ray Techni-cian			Lab Techni-cian			Director of Nursing		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education	1			1	1								3			3			1		
Improved Management	1	1					1	1	1	1			1	2							
Office Knowledge	1	1				1									1		1				
Staff-Patient Relationship																					
OB-GYN Knowledge										1	1										
Emergency Room Techniques										1	2										
Family Planning																					
Alcohol and Drug															1						
Coronary Knowledge										2		1	1		1		1				
Pharmacology																					
Pathology											1	1	2			11	4	2			
Therapeutic Information										2	2	1	1	4	2			1			
Health Education																	1				
Mental Health Practices																					
Dietary and Housekeeping								1													
Environment/Ecology																					
Equipment, Services and Facilities															1			1			
Knowledge of Law																					
Personnel Problems	1			1	1		1						2	1			1				
Miscellaneous																					

Table 25. (continued)

Need Group	P. N. Ward Secretary			Nurse OB-Surg.			P. T. Diet Helper			Nurse L. P.			Orderly			Director Inservice Education		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education										1								
Improved Management								1			2	1						
Office Knowledge			1							2	1	1						
Staff-Patient Relationship										1		1	1					
OB-GYN Knowledge		1								1								
Emergency Room Techniques						1				5	1	1						
Family Planning																		
Alcohol and Drug																		
Coronary Knowledge		2	1	1	1					4	3	1						
Pharmacology											3	1						
Pathology										2	1							
Therapeutic Information	2									3	2	4			1			1
Health Education																		
Mental Health Practices											4							
Dietary and Housekeeping							1					1						
Environment/Ecology																		
Equipment, Services and Facilities																		
Knowledge of Law																		
Personnel Problems										2	1			1				
Miscellaneous										1								

Table 25. (continued)

Need Group	Admin. Secretary			Nurse O. R.			Station Secretary			Asst. Nurse			Radio Tech.			Ward Clerk			Medicare Clerk		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education										2			1			2	1	1			
Improved Management	1			1	1								2	1	1	1	1				
Office Knowledge																1					
Staff-Patient Relationship												1					1				
OB-GYN Knowledge								1													
Emergency Room Techniques				1		1			1	1											
Family Planning																					
Alcohol and Drug																					
Coronary Knowledge					1	1	1			1											
Pharmacology																					
Pathology																					
Therapeutic Information				1	1					1				1	1						
Health Education																			1		
Mental Health Practices											1										
Dietary and Housekeeping																					
Environment/Ecology																					
Equipment, Services and Facilities														1							
Knowledge of Law																					
Personnel Problems																					
Miscellaneous																					

Table 25. (continued)

Need Group	Maint. Supervisor			Resp. Therapist			Consultant Physician			Pharmacist			Medical Records Librarian			Family Planning			O. R. Supervisor		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education	1					1							1	1		3	2				2
Improved Management											1	3							1	1	1
Office Knowledge													3	1			2	2		1	
Staff-Patient Relationship																2		1			
OB-GYN Knowledge																					
Emergency Room Techniques									1					1							
Family Planning																					
Alcohol and Drug																					
Coronary Knowledge																					
Pharmacology										7	3										
Pathology				1			1					1									
Therapeutic Information					1			1		1	1										
Health Education																2			1		
Mental Health Practices																1	1	1			
Dietary and Housekeeping																					
Environment/Ecology																					
Equipment, Services and Facilities										1	1										
Knowledge of Law																					
Personnel Problems																					
Miscellaneous																	1				

Table 25. (continued)

Need Group	Coordinator CPC			General Secretary			Dental Assistant			Public Health Nurse			Typist			Health Inspector			T. B. Project Nurse		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education						2					1		1								1
Improved Management		2	1		1	1			1		1	2	1			2	2		2		
Office Knowledge				3	3									1							1
Staff-Patient Relationships											1										
OB-GYN Knowledge										3	1										
Emergency Room Techniques																					
Family Planning	1									1		2	1							1	
Alcohol and Drug				1						2	1			1	1			1			
Coronary Knowledge														1							
Pharmacology						1															
Pathology					2					1											
Therapeutic Information							2	1													
Health Education	1							1			1										
Mental Health Practices											1									1	
Dietary and Housekeeping																					
Environment/Ecology																					
Equipment, Services and Facilities																					
Knowledge of Law																					
Personnel Problems				1						1	1	1			1			1			
Miscellaneous										1		1									

Table 25. (continued)

Need Group	Accounting Clerk			Social Worker			Home Health Aide			Sanitarian			Clerk			Ophthalmologist			Nurse R. N.		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education							1				1										
Improved Management	1		1												1						
Office Knowledge		1						1					2	1							
Staff-Patient Relationship				2																	
OB-GYN Knowledge																					
Emergency Room Techniques									1									1	2		
Family Planning																					
Alcohol and Drug																				1	
Coronary Knowledge																			1	1	
Pharmacology																1				1	
Pathology				1							1										
Therapeutic Information								1													1
Health Education																					
Mental Health Practices				1	3	1															
Dietary and Housekeeping										2											
Environment/Ecology												1									
Equipment, Services and Facilities																					
Knowledge of Law																					
Personnel Problems				1			1						1	1	1						
Miscellaneous																	1				

Table 25. (continued)

Need Group	Reg. Dental			Doctor Optometry			Medical Assistant			Cook			Counselor			Alcohol Education Specialist			Psychiatric Social Worker		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education																				1	
Improved Management		1								1									1		
Office Knowledge																					
Staff-Patient Relationship			1					1													
OB-GYN Knowledge																					
Emergency Room Techniques							2														
Family Planning																					
Alcohol and Drug													1								
Coronary Knowledge							1							1							
Pharmacology				1																	
Pathology							1														
Therapeutic Information														1							
Health Education	1						1									1	1	1			1
Mental Health Practices															1						
Dietary and Housekeeping										1	1	1									
Environment/Ecology																					
Equipment, Services and Facilities									1												
Knowledge of Law																					
Personnel Problems										1											
Miscellaneous					1																

Table 25. (continued)

Need Group	Mental Health Therapist			Alcohol Counselor			Psychologist			Administrator			Credit Manager			Insurance Manager			Tray Girl		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education							1												1	1	1
Improved Management																1			1	1	
Office Knowledge													1			1	1				
Staff-Patient Relationship					1					1						1					
OB-GYN Knowledge																					
Emergency Room Techniques											1										
Family Planning																					
Alcohol and Drug	1		1																		
Coronary Knowledge																					1
Pharmacology																					
Pathology																					
Therapeutic Information				1														1			
Health Education																					
Mental Health Practices		1					1	1	1												
Dietary and Housekeeping																			1	1	
Environment/Ecology																					
Equipment, Services and Facilities								1													
Knowledge of Law																					
Personnel Problems																					
Miscellaneous																					

Table 25. (continued)

Need Group	Ironer			Dish Washer			Security Officer			Microfilm Clerk			Medical Transcriber		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education															
Improved Management															
Office Knowledge										1			1		
Staff-Patient Relationship															
OB-GYN Knowledge															
Emergency Room Techniques															
Family Planning															
Alcohol and Drug															
Coronary Knowledge															
Pharmacology															
Pathology															
Therapeutic Information															
Health Education															
Mental Health Practices				2			1								
Dietary and Housekeeping															
Environment/Ecology															
Equipment, Services and Facilities															
Knowledge of Law								1	1						
Personnel Problems	8														
Miscellaneous															

Table 25. (continued)

Need Group	Assistant Dietary			Histologist			Secretary Assistant			School Nurse		
	1	2	3	1	2	3	1	2	3	1	2	3
Academic Education				1						1		
Improved Management	2											
Office Knowledge							1					
Staff-Patient Relationship												
OB-GYN Knowledge												
Emergency Room Techniques												
Family Planning												
Alcohol and Drug												
Coronary Knowledge												
Pharmacology												
Pathology											1	
Therapeutic Information										1		
Health Education												
Mental Health Practices												
Dietary and Housekeeping												
Environment/Ecology												
Equipment, Services and Facilities												
Knowledge of Law												
Personnel Problems												
Miscellaneous												

CHAPTER VI

CHARACTERISTICS AND EDUCATION NEEDS: PERCEPTIONS OF HEALTH PROFESSIONALS

Introduction

Health Professional Questionnaires were mailed to all 73 health professionals in the Albemarle Area. While the initial response was low, subsequent follow-up efforts were productive in obtaining 33 responses--a 45 percent response rate. At least one professional responded in each of the 13 categories of professionals.

Table 26 shows the respondents in the sample across the 13 occupational categories, compared to the actual distribution in the Albemarle universe. Of the 33 respondents, 18 were physicians and surgeons. Because of a widespread belief that there is an acute shortage of physician manpower in the area, data on physicians and surgeons have been treated separately in some instances; these instances are identified where they occur.

Characteristics

The typical health professional respondent in the Albemarle Area is in his late forties, as can be seen from Table 27. Ages of professionals in this study ranged from 32 to 80. The typical physician respondent is slightly older than other health professionals in the

Table 26. Health Professional Respondents in Sample versus Total in Albemarle Area

Type of Practice	A Number of Respondents in Sample	B Total in Albemarle Area	Percentage of Sample[1]	Percentage of Total in Area[2]
General Practice	9	25	27	34
Internal Medicine	2	5	6	7
OB/GYN	1	3	3	4
Surgery	1	6	3	8
Dental	6	15	18	20
Pediatrics[3]	2	3	6	4
Optometry	6	7	18	10
Veterinary	1	3	3	4
Ophthalmology	1	1	3	1
Optician	1	1	3	1
Otolaryngology	1	1	3	1
Pathology	1	1	3	1
Chiropractic	1	2	3	3
TOTAL	33	73	99[4]	98[4]

[1]Sample percentage = percentage of respondents in sample by type of practice (i.e., $\frac{\text{Column A}}{33}$).

[2]Percentage of total = percentage of total professionals in area by type of practice (i.e., $\frac{\text{Column B}}{73}$).

[3]One individual designated himself as a pediatrician for the purpose of this table but as a general practitioner elsewhere.

[4]Totals do not equal 100 percent because of rounding.

Albemarle Area and significantly older than the typical United States physician, whose mean age is 46.1 years.*

Table 27. Age of Health Professionals

	Number Respondents	Mean Age	Median Age	Modal Age
All Health Professionals (Range Min. 32 - Max. 80 = 48)	33	49	47	47
M.D.'s only (Range Min. 33 - Max. 80 = 47)	17	50.8	48	47

Table 28 gives the work hours for both health professionals and the physician subgroup. Physicians (including surgeons) work longer hours per week than do other health professionals. The typical U. S. physician works between 45 and 55 hours per week, depending on his specialty. Responding physicians in the Albemarle Area worked slightly longer hours than U. S. physicians but shorter hours than the typical physician in non-metropolitan areas of the United States.

Median and modal figures in Tables 28 and 29 are probably more accurate measures of central tendency than the means. Means were affected by one physician who reported 90 work hours per week and a patient load of 500, both of which are more than twice the modes for health professionals.

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*All statistics on U. S. physicians are taken from the 1972 edition of The Profile of Medical Practice published by the American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

Table 28. Weekly Work Hours of Health Professionals--All Professional Activity

	Number of Respondents	Mean Work Hours	Median Work Hours	Modal Work Hours
All Health Professionals Min. Max. (Range 27 - 90 = 63)	33	50.4	50	40
M.D.'s only Min. Max. (Range 36 - 90 = 54)	18	57.5	55	50

Table 29. Weekly Patient Load of Health Professionals

	Number of Respondents	Mean Patient Load	Median Patient Load
All Health Professionals Min. Max. (Range 40 - 500 = 460)	33	142.6	110
M.D.'s only Min. Max. (Range 75 - 500 = 425)	17	196	175

The mean weekly patient load of physicians in six specialties varies from 110.0 in New England to 186.8 in the East South Central states. In the South Atlantic states, which include North Carolina, the mean is 139.9. Over the entire country, it is 132.5. Table 29 indicates that the patient loads of responding physicians in the Albemarle Area, like their weekly work hours, are greater than for all health professionals. Similarly, Albemarle physician respondents see more patients per week than do their counterparts in other parts of the country.

Inservice Education Needs of Health Professionals

Each health professional was asked to list inservice/continuing education needs which applied directly to him. All needs listed by all health professionals are included in Table 30. Priority scores were determined as previously by multiplying each frequency by three, two, or one for a first, second, or third priority, respectively, and then summing the results for each need.

The first finding of note is that the list seems inordinately short. Health professional respondents apparently do not see themselves as needing a great deal of inservice education other than what can be provided through individual study.

A close examination of Table 30 reveals that several of these individuals chose by design to ignore the instructions on the questionnaire, listing needs other than those for inservice education. Removing those responses, which indicate a need for a receptionist, new machinery, and more general practitioners, a total of 23 different needs for inservice education remains, listed by 33 professionals. Many of these are too general or involve too few people for program development.

Postgraduate courses conducted in the area by the University of North Carolina at Chapel Hill received highest priority mention as a viable method of inservice education for physician respondents, followed by clinical pathology seminars which could be conducted in hospitals. As can be seen from the table, dentists have a number of needs for inservice education in specific areas--perhaps out of proportion to their representation in the survey.

Table 30. Inservice Education Needs of Professionals as Indicated by Responding Professionals

Priority Score	Need
11	Postgraduate courses should be continued by UNC
9	Seminars in clinical pathology with particular reference to newer procedures and interpretations of data
6	All areas of G.P. (except maternity)
6	Attend meetings and keep up to date on new information
5	Dental hygienist-assistant courses added to community college curriculum
5	Cardiology
5	New general practitioner
4	Receptionist
3	X-ray equipment--need to keep up to date
3	Seminars in surgical pathology
3	New general machinery
3	Video tapes of postgraduate courses offered in medical cntrs.
3	New concepts in instrumentation and techniques
3	Nutrition
3	Dental education courses
3	Preventive orthodontics
3	Laporoscopy as new tool in diagnosis
3	Improved record-keeping and practice management
2	Oral surgery
2	Pharmacology
2	Partial dentures

Table 30. (continued)

Priority Score	Need
1	Home education in health matters, diets, etc.
1	Oral medicine
1	Restorative dentistry
1	Psychiatry
1	Definition of proper utilization of services from each member of health team

Position Categories Most in Need of Inservice Education

Health professionals, employers of health manpower, and health administrators were asked to indicate which position titles they considered to be in greatest need of inservice education. These titles were ranked on the one-to-five scale and priority scores established according to the system described previously. Some position titles were combined into related categories in the data analysis process.

The 20 position titles and/or categories adjudged most in need of inservice/continuing education by the respondents are listed in Table 31. Nurses of all types and levels were judged by professionals and administrators as being the occupational group whose needs for inservice education were by far the most acute. This bears out the perceptions of nurses themselves, who listed large numbers of needs. The needs of responding nurses are so many and so varied that virtually any program established for this group should meet some of those needs.

Table 31. Twenty Position Categories Most in Need of Inservice Education as Ranked by Professionals, Employers of Health Workers and Health Administrators

Priority Score	Position Category
29	Registered Nurse
25	Licensed Practical Nurse
21	Public Health Nurse
16	Physician, particularly G.P.
16	Ambulance Attendant
15	Sanitarian
15	Food Planning and Service Personnel (Dietitian, Nutritionist, Cook, Dishwasher)
13	Family Nurse Practitioner; Personal Care and Family Aide Nurse
13	Dentist
12	Laboratory Technician
12	Orderly
11	Nursing Assistant
7	Executive Housekeeper and Assistants
5	Maintenance Personnel
5	Physician Assistant
5	Adult Service Specialist
5	Eligibility Specialist
5	Homemaker
5	Health Administrator
5	Psychiatric Social Worker

Career Ladder Mobility Programs

Career ladder mobility programs are an effort to arrange curricula offerings sequentially so that individuals preparing for lower-level jobs in a given occupation will receive credit for previous training should they decide to prepare for higher-level jobs. With a career ladder mobility program in effect, a graduate of a one-year LPN program, for example, who subsequently decides to become an RN would receive a full year's credit toward a regular RN program. Under the present system in most locations, this person would be required to start RN training at the beginning.

Health administrators at hospitals, public health agencies, and mental health agencies were asked to indicate position titles most in need of career ladder mobility programs. Priority scores were determined using the one-to-five system described previously. The results of these rankings are reported in Table 32. Some administrators expressed doubts that career ladder mobility programs could ever become a reality; but if they were to be developed, the nursing area seemed not only to have the greatest need, but also the greatest potential.

Table 32. Ten Position Titles Ranked Most in Need of Career Ladder Mobility Programs by Employers of Health Workers and Health Administrators

Priority Score	Position Title
14	Nursing Assistant
12	LPN
10	Public Health Nurse II
7	Cook, Dishwasher
6	Sanitarian
5	Mental Health Aide
4	Personal Care and Family Aide Nurse
4	Outreach Workers for Aftercare
4	EKG Technician
4	Ward Clerk

CHAPTER VII

HEALTH MANPOWER SHORTAGES

Results of study efforts at determining manpower shortages are reported in two sections--(1) physician manpower, based on statistics on the number of physicians per unit of population, and (2) a more subjective approach, based on the perceptions of health professionals, employers, and health administrators of which health position titles were in short supply. Physician statistics were examined separately because of the widespread belief noted in the previous sections of this report that acute physician manpower shortages exist in the area.

Physicians (All Specialties)

At the time of the survey 45 physicians served the Albemarle population of over 97,000, a physician-to-population ratio of 46 per 100,000. Compared to the United States as a whole, which has more than three times as many physicians for the same population measure (150 per 100,000), the Albemarle Area might appear to be in the throes of a health care crisis.

Physician availability and distribution are far more complex than this, however. Such comparisons implicitly assume that the Albemarle Area is somewhat typical of the nation as a whole. Patently, it is not. Further, it is well known that physicians are more attracted to areas of high population density, high economic activity, and high per capita income than to rural areas of any type. This fact is clearly demonstrated by Table 33, taken from the 1972 edition of The Profile of Medical

Table 33. Physician-Population Ratios by Size of County, 1970

Demographic County Classification	Population Per Physician* 1970	Income Per Capita 1970
Total	804	$3,308
Non-metropolitan		
Less than 10,000 inhabitants	2,491	2,419
10,000-24,999 inhabitants	1,965	2,394
25,000-49,999 inhabitants	1,562	2,621
50,000 or more inhabitants	1,145	2,814
Metropolitan		
Potential metropolitan	809	3,086
50,000-499,999 inhabitants	932	3,114
500,000-999,999 inhabitants	711	3,404
1,000,000-4,999,999 inhabitants	667	3,714
5,000,000 or more inhabitants	521	4,165

*Based on total non-federal physicians (all specialties) in patient care and resident population as of 12-31-70.

Practice, published by the American Medical Association. A much more fair and reasonable means of comparison is a contrast of the population per physician of each of the counties in the Albemarle Area with counties of similar population size throughout the United States. Even this, however, is not an entirely accurate comparison because the Albemarle Area's average per capita income ($1,460 in 1970) is only a little more than one-half as much as that of counties of similar populations across the nation. This factor alone could be expected to put the Albemarle Area at a distinct disadvantage, even among counties of similar population size, in attracting physicians.

Nevertheless, when this comparison is made, the area as a whole fares rather well. The mean population per physician in counties across

the nation similar in size to those of the Albemarle region, when weighted for county populations, is 2,101. The Albemarle Area's average population per physician is an only slightly higher 2,162. This difference could easily be accounted for by the moderately longer work hours and higher patient loads reported by Albemarle physicians.

Again, averages do not tell the entire story. As can be seen from Table 34, the physician manpower problem in the Albemarle Area is certainly as much one of distribution as of shortage. Pasquotank County's population-per-physician ratio surpasses the average for all non-metropolitan counties regardless of population and approaches that of metropolitan areas. If, somehow, all the physicians in the Albemarle Area could magically be distributed proportionately throughout the ten counties, it would take three additional physicians to give the entire area a physician-to-population ratio which would be better than the average for counties of similar population across the nation.

Since this redistribution is highly unlikely to occur, the "gross need" figure of approximately 12 (Table 34) may be in a sense more accurate. However, if 12 physicians could be brought into the area, there is no guarantee that they would distribute themselves appropriately among the various counties. The maldistribution problem among counties could conceivably worsen, while overall Albemarle Area population-per-physician figures appeared rosy.

Population-per-physician averages are only one index of physician availability. Alone they are inadequate to describe or even define the complexities of the Albemarle physician shortage. Although they do give some general indications, the indications must be tempered by a

Table 34. Albemarle Physician-Population Ratios Corrected for Size of County

County	1970 Population	1972 Population Per Physician	1970* U. S. Average Population Per Physician	Additional Physicians Needed to Meet U. S. Average
Camden	5,453	5,453	2,491	1.2
Chowan	10,764	1,538	1,965	-1.5
Currituck	6,976	3,488	2,491	.8
Dare	6,995	3,497	2,491	.8
Gates	8,524	4,262	2,491	1.4
Hyde	5,571	5,571	2,491	1.2
Pasquotank	26,824	1,072	1,562	-7.8
Perquimans	8,351	8,351	2,491	2.4
Tyrrell	3,806	3,806	2,491	.5
Washington	14,038	3,701	1,965	3.5
Total	97,302			
Net Need				2.5
Gross Need				11.8

*According to various county population groupings, corrected for size of county. See Profile of Medical Practice, p. 113.

knowledge of the area. For example, differences in geographic size of the counties are important. A person in Perquimans County, which has a greater "need" for physicians than Dare, will doubtlessly find it easier to get to a physician in Chowan or Pasquotank than will a resident of Dare's Outer Banks to one in his own county. Economic factors and the

level of citizen health care awareness are also important considerations in determining need for physicians.

While the area as a whole suffers at least moderately from a lack of physicians, Washington County has a combination of circumstances that warrant particular concern. Not only do the population-per-physician figures indicate the greatest need there, but a relatively high level of citizen health care awareness exists in conjunction with aging physicians.

While physician maldistribution has been discussed from a geographical standpoint, another potential area of maldistribution occurs among specialties, as can be discerned from Table 35. While it is perhaps risky to compare the Albemarle Area with the United States as a whole for reasons mentioned previously, such a comparison in this case is striking. Forty-two of the 45 physicians (93.5 percent) in the Albemarle Area practice in five common specialties, compared to only 56.3 percent for the nation as a whole (excluding psychiatrists).

When compared with the United States, the Albemarle Area lacks specialists of all types, with the exceptions of obstetricians/gynecologists and general surgeons. There are particular shortages of psychiatrists and pediatricians.

Perceptions of Manpower Shortage

Professionals, employers of health manpower, and health administrators were asked to indicate, then rank order (by position title) on the one-to-five scale mentioned previously, the five most critical areas

Table 35. Primary Self-Designated Specialty of Physicians in Patient Care: Albemarle Area Versus Nation as a Whole: Six Selected Specialties as Percentages of Total

Type of Practice	Percentage United States 1971*	Percentage Albemarle Area 1972
General Practice	19.2	59.0
Internal Medicine	14.3	11.1
General Surgery	10.3	13.3
Psychiatry	6.7	0.0
Obstetrics/Gynecology	6.5	6.7
Pediatrics	6.0	3.4
Total	63.0	93.5

*American Medical Association, The Profile of Medical Practice.

of health manpower shortage in the Albemarle Area. Table 36 gives the results of these rankings.

With regard to physicians, the table of perceived needs tends generally to bear out the needs indicated by the statistics reported in the previous section. One exception to this is, of course, the first-place need for general practitioners. It can be surmised that health professionals and administrators are realists. They doubtlessly know that specialists are unlikely to be attracted in large numbers to the area and are willing to be satisfied by the addition of more general practitioners even though the proportion of G. P.'s to specialists is already very high.

Table 36. Twenty-Five Areas of Most Acute Manpower Shortage as Ranked by Professionals, Employers of Health Manpower, and Health Administrators

Priority Score	Job Title
74	General Family Practitioner
31	Registered Nurse
29	Pediatrician
29	Psychiatrist
28	Dentist
23	Internist
18	Sanitarian
15	Clerk
14	Laboratory Technician
14	Public Health Nurse I
13	Physician Assistant
13	Anesthesiologist
13	Otolaryngologist
12	Dietitian, Nutritionist
11	Physical Therapist
11	Orthopedic Surgeon
11	Personal Care and Family Aide (Nurse)
10	Ambulance Attendant
10	Family Nurse Practitioner
10	Obstetrician/Gynecologist
10	Orthodontist
10	Public Health Nurse II
8	Volunteers
8	X-ray Technician
8	Radiologist

The shortage of pediatricians shown in Table 35 is further supported by the perceptions of the professionals, employers, and administrators who rated that specialty among the three most acutely needed health position titles. Similarly, the need for psychiatrists is clearly demonstrated by both methods of need determination. Taken in the aggregate, physicians and surgeons of all types account for eight of the perceived 25 most acutely needed position titles in Table 36, and registered nurses account for five.

The North Carolina Board of Nursing has provided the information in Table 37 which indicates the distribution of employed and unemployed registered nurses of all types by county in the Albemarle Area. The total percentage of registered nurses who are unemployed (26 percent) is five percent higher for the Albemarle Area than for North Carolina as a whole (21 percent), despite a perceived shortage of nurses.

Table 37. Distribution of Employed and Unemployed Registered Nurses by County (1971-1973)

County	Total R. N.'s	R. N.'s Not Employed	R. N.'s Employed
Camden	5	3	2
Chowan	28	3	25
Currituck	3	2	1
Dare	11	9	2
Hyde	4	1	3
Gates	5	0	5
Pasquotank	72	11	61
Perquimans	4	1	3
Tyrrell	7	0	7
Washington	22	3	19
Total	161	33	128
Percentages	100%	26%	74%

As might be expected, the counties with hospitals (Chowan, Pasquotank, Tyrrell, and Washington) have not only the largest numbers of nurses, but also the highest ratio of nurses employed to unemployed. Of

the 129 nurses in these four counties, 17 (7.6 percent) are not employed. Of the 32 nurses in the other six counties, 16 (50.0 percent) are not employed. In the most isolated of these six counties, Dare, an incredible 82 percent of the total registered nurses are not working.

Clearly, distance from place of residence to the nearest hospital is a factor in the employment of nurses. Unlike physicians, many married nurses have family responsibilities which preclude their choice of residence for purely professional reasons. If the nurses in the six counties without hospitals could be employed at the same rate as those in the four counties which do have hospitals, the total supply of registered nurses in the area could be increased by 28 percent without bringing in an additional nurse.

When the top 25 manpower shortage perceptions of health professionals, employers, and administrators in Table 36 are aggregated by generic group, physicians and surgeons of all types are perceived in greatest shortage, followed closely by registered nurses of all types.

Summary

This study has found that significant health manpower shortages exist when measured in conventional terms. Further, these shortages are complicated by problems of geography and transportation. For planning purposes, the existence of these conventionally measured shortages should not be translated directly into health manpower needs. It would seem that the Albemarle Area could benefit from the newer types of health manpower--for example, the family nurse practitioner and the physician assistant. In short, health manpower acquisition should be made

on the basis of skills rather than the traditional form of health manpower.

CHAPTER VIII

DISCUSSION AND CONCLUSIONS

The intent of this chapter is to relate the results of the study to its purpose and objectives. As indicated previously, the overall purpose of the study was to develop and implement a practical design for the collection of primary data on health resources and educational needs--in short, to design and implement a health education needs assessment.

General

Before the linkages between the results and objectives are established, however, certain general considerations associated with the design seem worthy of mention. For example, the inductive design employed is recognized as only one among many possible approaches to bridging the gap between theory and practice in occupational education planning, which was the broad problem addressed by the study. Other more common but less comprehensive approaches have been multidisciplinary but confined to a single institution--for example, programs of vocational education in a secondary school or technical programs in a community college or technical institute. Typically, the studies have been based on manpower supply/demand figures, surveys of student interests, or some combination of the two. In these models, demand minus supply in a given occupational area indicates need. If, concurrently, significant numbers of individuals indicate interest in pursuing

education in that need area, there may be an indication that a new program is feasible.

Consideration of manpower supply/demand alone may lead to the creation of programs in which there is no student interest and/or to the charges that the institution or agency is a pawn of industry. Consideration of student interests to the exclusion of labor market realities may result in programs for which there are limited or nonexistent employment opportunities. Further, it is likely that many individuals are unable to express overt interests in programs which have never occurred to them. Thus, a singular consideration of student interests may not indicate a need for a new program until after it has been obvious from other indicators for a long time.

Still other approaches to needs assessment have involved determining societal needs, often through Delphi panels for converging the opinions of experts, and cost/benefit analyses. The former appears to be a most useful technique in situations where a mission has not been established. The latter is helpful, though not fully developed, in the second phase of planning in which decisions between various alternative approaches are required.

Purpose

The overall purpose of the present study was achieved through the development and subsequent implementation of a needs assessment. The study was based on the general planning and needs assessment literature and is capable of being utilized within the framework of a number of planning models. Implementation of the design provided data of

immediate utility to planners in establishing goals, objectives and priorities for health education generally and for an Area Health Education System specifically.

Fulfillment of Objectives

The study had three specific objectives as stated in the first chapter:

1. To develop, consonant with accepted planning theory, a procedure and accompanying instruments for assessing health education needs in a given geographic area.
2. To determine health education needs and identify health education resources in a given geographic area through primary data produced by the method.
3. To point out the implications of the method of needs assessment to other areas of occupational education.

Objective 1 was fulfilled through development of the procedure outlined in Chapter II and through the production of the seven survey instruments in Appendix C. The method is eclectic in that it draws from several of the approaches mentioned earlier in this chapter, yet provides information in areas beyond that of any two of them. The method can provide information on manpower supply and demand, at least in terms of priority if not actual numbers. It can provide information on student interests and needs, at least for in-service education. It addresses itself only indirectly to societal needs, but occupational education already has a mission set by Congress in response to societal needs.

Although the method is based on planning theory, perhaps its most outstanding feature is its conceptual and functional simplicity. The modification of the approach for another area of occupational education or to a jurisdiction other than a state planning region; the implementation process including data analysis; and the writing of a report require little sophistication in research design or statistics and should be well within the level of expertise of school administrators at any level.

The inductively oriented approach was chosen over a deductive approach for two major reasons, both related to external methodological requirements. First, the North Carolina Regional Medical Program requirements stipulated that the needs assessment design would provide for target group involvement. Since lay persons can hardly be expected to articulate goals for Area Health Education Systems, directly, an inductive approach was indicated. Second, the proposal under which the study was funded constrained the author to an inductive methodology since it required a position audit as a first step in the needs assessment process.

As indicated previously, the second criterion for the fulfillment of objective 1 was the development of instrumentation to accompany the needs assessment design. Seven instruments, one each for health workers, hospital administrators, public health agencies, mental health agencies, social service agencies, educational institutions and health professionals, were constructed and are included as Appendix C.

A particular strength of the instruments associated with the method is that they provide for the acquisition of information in

addition to needs and manpower shortages. Through computer processing of the data, it was possible to distribute such factors as age, sex, workplace, position title, etc. (Table 4) across each other in 27 different combinations. Although many of these two-way distributions proved, in the demonstration case, to be of no obvious significance, they could be of significance in other implementation situations. The implications of all the two-way distributions were not fully explored, and, in fact, only two were actually included in the report. The cross-tabulation of health worker need groups by workplace was included to determine to what extent need groups were a function of workplace. If certain worker needs are peculiar to certain workplaces, then programs for those workers need be offered only in those workplaces. It would seem also that it would be helpful to management personnel, in planning programs for their various workplaces, to know which need groups are most applicable to their personnel.

The cross-tabulation of health worker need groups by position title was included to see what relationship existed between need groups and position titles. If certain need groups apply to only certain position titles, then the implication is that programs designed to meet the needs in those groups might possibly need to include only those position titles.

Similar data on professionals are also provided by the method. Age of incumbents (physicians, for example) has definite implications for replacement demand. Increased work hours and productivity can compensate for shortages of personnel. Thus, comprehensiveness and specificity are desirable features of the method and the instruments. Many

needs assessment surveys tend to focus on only one kind of data such as manpower needs, inservice education needs, etc.

Since the study was of a developmental nature, it was thought that the effectiveness of the design could best be determined through actual trial.

Objective 2 was fulfilled through the actual implementation of the design. The "community" selected for the implementation phase of the study was North Carolina State Planning Region R, otherwise known as the Albemarle Area or region. Consisting of ten contiguous counties in extreme northeastern North Carolina, the Albemarle Area was one of eight North Carolina regions selected at various times for Area Health Education System development. Presently, the Albemarle Area Health Education System is one of two which have been established and are functioning under North Carolina Regional Medical Program auspices.

The Albemarle Area Health Education System is a product of the efforts of several organizations in the Albemarle Area which have related health interests and responsibilities. The two such organizations most directly responsible for the formation of the Albemarle AHES are the Albemarle Regional Planning and Development Commission, which served as fiscal agent for the grant, and the Albemarle Human Resources Development System (AHRDS), which developed the proposal. AHRDS is concerned with the health and well-being of the population and was established for the explicit purpose of planning, developing, and carrying out a variety of health education activities.

The proposal for the planning and development of the Albemarle Area Health Education System, as submitted by AHRDS to the North

Carolina Regional Medical Program, specified that a one-year planning study be conducted prior to the actual operation of the system. The study was completed by the investigator during his professional association with The Institute of Human Ecology (TIHE) through a subcontract with AHRDS. The Institue of Human Ecology (now known as The Human Ecology Institute) is a private, non-profit, consulting and service organization located in Raleigh, North Carolina.

The implementation phase of the study located the facilities, materials, services and resources available for health education in the Albemarle Area. In addition, coordination activities among the various facilities were examined as well as the inservice/continuing education needs of area health workers and health professionals. Manpower shortages were noted, with some of those perceived as most serious, discussed.

The following conclusions relate to objective 2:

1. While various preservice and inservice health education opportunities exist immediately outside the Albemarle Area, there is little evidence to suggest that Area residents utilize them, East Carolina University excepted.
2. A leadership and coordination vacuum, caused primarily by an absence of health-oriented institutions of higher education, is undoubtedly the largest single problem facing the Albemarle AHES.
3. While the various agencies seem to be aware of the existence of each other, no central coordinating agency

exists to maximize the utilization of available resources and facilities for inservice health education.

4. Four of the top five priority need groups identified by respondents did not relate specifically to health:
   a. Improved management techniques
   b. More academic education
   c. Improved office knowledge and skills--record-keeping and interpretation
   d. More information about therapeutic techniques
   e. Personnel problems and working conditions

   Groups "a" and "e" are obviously related and indicate that both the supervisors and the workers perceived the need for improved management techniques. The remaining three groups may be taken as a further manifestation of the area's lack of educational institutions. Hospitals alone, or in conjunction with outside educational institutions, may be able to meet the needs for knowledge of therapeutic techniques, but they are not likely to be able to eliminate the others.
5. Analysis of the cross-tabulation of need groups by workplaces indicated that groups "a," "c," and "e" as well as general health education and drug abuse education were high priorities in nearly all workplaces.
6. Few need groups appeared to be related to given workplaces.

7. Analysis of the cross-tabulation of position titles by need group yielded few need groups related to position titles.
8. Physicians did not perceive themselves to be in as great a need for inservice education as they did nurses.
9. Nurses of all types and levels saw themselves in greater need than any other group. Responding physicians agreed with this judgment.
10. Despite manpower shortages in a number of critical areas, qualified employees can be obtained in virtually any position title if the salary is attractive.
11. Physicians and nurses, already scarce in the area, appeared even more so because of maldistribution both by specialty and by geography.
12. Further study is needed to determine the degree of interest in health careers evidenced by Albemarle students and to determine factors affecting their selection of schools.

On the basis of the findings and conclusions of the study, the following general objectives for the Albemarle Area Health Education System to pursue during its initial operational year were recommended:

1. To promote efficient utilization of existing health resources in meeting area needs through increased coordination among provider agencies and educational institutions.

a. To act as a central clearinghouse for agencies, interest groups or individuals seeking or potentially able to provide facilities and resources (both human and material) for inservice/continuing education programs and interdisciplinary work experience programs throughout the area.

b. To assist educational institutions and other agencies providing preservice and inservice education programs in the health field by providing information to them about manpower shortages, inservice education needs, and other information in planning.

2. To increase awareness by both the general public and health personnel of available health services and facilities, preservice and inservice education programs, manpower shortages, and employment opportunities in the health field.

3. To develop and operate a limited number of programs, broadly based to involve maximum numbers of persons, including if possible, some direct services to the general public. Such programs should be selected to bring maximum benefit to the area as well as maximum visibility to the system.

The conclusions and recommendations were well received by the Albemarle Area Health Education System. Plans were made to commence implementation of recommendations 1 and 2 immediately and of recommendation 3 when funds were available.

The discussion of the degree of achievement of objective 3 will focus on three concepts: (1) contribution of the study to the literature, (2) generalizability to other occupational education settings, and (3) methodological features.

Needs assessment in education, as Kaufman (1972) has stated, is "a fledgling field." The relationship between needs assessment and educational planning is not clear. Indeed, a search of the literature has revealed that there is virtually no common agreement even on a definition of the term "needs assessment" beyond the notion of the discrepancy between "what is" and "what ought to be." Further, while references to needs assessment are bountiful, very few studies can be found which treat the subject at the "how to" level of the practitioner.

The author feels that the present study has contributed to the literature through (1) clarification of the definition of needs assessment, (2) establishment of a conceptual framework for needs assessment within the broader area of planning, (3) development of a pragmatic method of needs assessment which can be understood and utilized by practitioners, (4) implementation of the method in one AHES to ensure its workability, and (5) exploration of implications of the method for possible transportability to other settings or generalizability to other areas of occupational education.

The inductive method of needs assessment has generalizability at several levels. First, as a method for accomplishing one subset of the planning process, it is compatible with a number of planning models. Second, it can be transported virtually intact to other settings (eight in North Carolina alone) where Area Health Education Systems are being

planned. Third, with only slight modification it can be adapted to the collection of data for planning health programs in occupational education outside the AHES context. Fourth, by changing the substance of the instruments (e.g., from health education to business and office education or trades and industry), the method could be generalized to other content areas.

The method is generalizable to other rural contexts with very little change and to progressively more urban contexts with equally progressive changes. Although specifically designed for a state planning region, the method might be expected to work even better in a smaller jurisdiction such as a county or town. It would doubtlessly be too expensive and cumbersome to implement on a statewide basis; however, implemented in all planning regions, it could provide data by area for an entire state.

The method is participatory; that is, it involves the target population in the planning process. Needs for inservice education, for example, are determined on the basis of the perceptions of the people to whom the service will be provided, as well as the perceptions of their employers. Such individual participation in planning also aids in overcoming informal contextual constraints (Lawrence and Dane, 1974) in problem definition (e.g., political considerations). Further political credibility accrues through the method's responsiveness not only to individual input, but also to that of institutions, organizations, and offices as well.

Additionally, the methods of data analysis employed in the approach present the aggregated needs assessment information about an

area in such a way that lay advisory boards (which, in some instances, are decision-making boards as well) can understand and directly act upon the data. While the suggested data treatment indicates priorities, decision-making boards are accorded their rightful prerogative of superimposing "common sense," political, or other realities upon the priorities. There may be a number of logical reasons, for example, for a system not to respond to the highest priority need as indicated by the data.

While deductive models can proceed purely on logic, the inductive method hinges on target group involvement. Many persons are not aware of goals or methods of setting goals. The "where are we now?" first step of the inductive approach has great appeal to the layman in terms of both common sense and his involvement in the process. Involvement almost always engenders support. Deductive approaches which often depend on Delphi panels to set goals may not receive the benefit of this important political aspect.

Virtually all educational planning situations are affected by the theory/practice gap, and indications are that the problem will not be solved overnight. Although the actual data in the study may be of little importance outside the area in which they were collected, the study methodology has bridged the gap in one subset of planning and in one subset of occupational education in one geographic area. It is expected that the method and the demonstration of its implementation can serve as a base which will aid others in perhaps more ambitious or more sophisticated attempts to connect theory to practice.

LIST OF REFERENCES

Albemarle Regional Planning and Development Commission. "First Stage Development Plan." Edenton, North Carolina: Albemarle Regional Planning and Development Commission, 1972.

Alger, Leon J., Jr. "A Rationale for the Establishment of Area Vocational Education Programs in Michigan." Unpublished doctoral dissertation, Michigan State University, 1972.

American Medical Association. The Profile of Medical Practice. New York: The American Medical Association, 1972.

Antonellis, G. P., and George B. James. Cross Discipline Planning. Salt Lake City, Utah: Olympus Publishing Company, 1973.

Barber, R. J., and C. W. Benson. "An Evaluation-Accountability Model for Regional Education Centers." Paper presented at the Rocky Mountain Education Research Association Meeting, Las Cruces, New Mexico, November, 1972.

Baumel, C. Phillip, et al. The Community Survey. Ames: Iowa State University of Science and Technology, November, 1964.

Borgen, Joseph A., and Dwight E. Davis. An Investigation of Decision-Making Practices in Illinois Junior Colleges with Implications Toward a Systems Approach to Curriculum Development and Evaluation in Occupational Education as Part of the Phase II Report. Springfield: Illinois State Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education, June, 1972.

Chambliss, Kenneth M. "Staff Needs for Planning Inservice Education Programs in Adult Trade-Technical Institutes." Unpublished doctoral dissertation, Texas A & M University, 1966.

"Comprehensive Health Planning Agency." Unpublished results of a State study on health manpower for Region R. Raleigh, North Carolina: 1972.

Comprehensive Planning Model for Educational Programs. Carson City: Nevada State Department of Education, Division of Planning and Evaluation, 1973.

Correa, Hector, and Don Adams. "A Model for a Comparative Study of the Educational Planning Process." Educational Planning, 2:3 (December, 1972), 3-21.

Division of Occupational Education. North Carolina State Plan for Occupational Education. Raleigh: North Carolina State Department of Public Instruction, current edition.

Division of Occupational Education. "Program Planning Guide, Occupational Education." A Handbook for Local Planners, Secondary Schools. Raleigh: North Carolina State Department of Public Instruction, updated edition.

Dodge, Larry D. A Survey of Vocational-Technical Education Needs in Goshen County. Tarrington: Eastern Wyoming College, August, 1967.

Doob, P. A. "Prospects for Simulation Gaming in Health Planning and Consumer Health Education." Educational Resources Information Center (ERIC) reprint, ED 070 596, 1972.

Dynamic Analysis and Strategic Planning (DASP) Program Division. "A National Study of the Availability and Use of Manpower Data in Vocational Education." Proposal submitted to the National Institute of Education. Raleigh, North Carolina: Center for Occupational Education, North Carolina State University, 1974.

Educational Needs Assessment Study for Maryland. Baltimore: Maryland State Department of Education, 1973.

Educational Resources Information Center. "ERIC Abstracts: A Collection of ERIC Document Resumes on Educational Planning." ERIC Abstracts Series, No. 14. Washington, D. C.: American Association of School Administrators, January, 1971.

Educational X-Ray of the Mapleton Public Schools. Denver, Colorado: Mapleton Public Schools, 1972.

Estes, Nolan. "How Can We Make the Administrative Team Concept Come Alive?" Paper presented at the 105th Annual Convention of the American Association of School Administrators, San Francisco, March, 1973.

Fincher, Cameron. "Planning Models and Paradigms in Higher Education." Journal of Higher Education, 43:9 (December, 1972), 754-767.

Flores, Thomas R. "Student Personnel Programs for Married Students: A Needs Assessment." Paper presented at the American Personnel and Guidance Association Convention, San Diego, April, 1973.

Hallan, Jerome B. The Use of Information in Health Planning. Chapel Hill, North Carolina: Department of Health Administration, School of Public Health, University of North Carolina, 1971.

Hand, Samuel E. An Outline of a Community Survey for Program Planning in Adult Education. Tallahassee: Florida State Department of Education, April, 1968.

Heinkel, Otto A. Priority Determination for Vocational Education Through a Formal Needs Assessment Process. San Diego, California: Research Office, San Diego Community College District, 1973.

Hershkowitz, Martin. A Study to Validate Goals for Public Education and to Assess Educational Needs in the State of Maryland. Baltimore: Maryland State Department of Education, 1972.

Hinds, Richard H. Educational Program Planning and Related Techniques: An Annotated Bibliography. Miami, Florida: Dade County Public Schools, March, 1969.

Howes, Robert G. "A Systems Approach to Planning." NCEA Bulletin, 65:3 (February, 1969), 31-33.

Jamison, Colleen, and Jeanne McLeod-Guertin. "Two System Models for Educational Planning." Educational Technology, 9:6 (June, 1969), 29-31.

Kassel, Myrna B. Community Organization for Allied Health Manpower: Manpower for the Human Services. Chicago: Human Services Manpower Career Center, Illinois State Department of Labor, December, 1972.

Kaufman, Roger A. Educational System Planning. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972.

Kurth, Richard W. "A Report on the Florida Educational Needs Study, 1968-1970." Part of a symposium on "Comparative Models for State Needs Assessment" presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

Latta, Raymond F., and James P. Papay. "Planning for Change: An Iterative Approach." Planning and Changing, 2:2 (July, 1971), 70-80.

Lawrence, John E. S., and J. K. Dane, editors. State Vocational Education Planning. DASP Planning Paper No. 1. Raleigh, North Carolina: Center for Occupational Education, North Carolina State University, 1974.

Leggett, Stanton, and Dennis Binning. "Fourteen Plans in Search of a Place." College and University Business, 50:6 (June, 1971), 35-42.

Lewis, William J. "A Study of Adult Education Needs as Perceived by Lincoln County Part-Time Farmers." Unpublished master's thesis, Oklahoma State University, 1968.

McGuffey, Carroll W., editor. Educational Facilities Survey: Atlanta Public Schools, 1971-1981. Atlanta: Atlanta Public Schools, 1972.

McGuffey, Carroll W. Systematic Planning for Educational Facilities. Chicago: Chicago Board of Education, Illinois Department of Facilities Planning, 1973.

McMahon, Ernest E. Needs--of People and Their Communities--and the Adult Educator. Washington, D. C.: Adult Education Association of the U. S. A., 1970.

McNamara, James F. "A Regional Planning Model for Occupational Education." Socio-Economic Planning Sciences, 5 (1971), 317-339.

McNamara, James F., et al. "A Systems Approach for Regional Planning in Vocational Education." Planning and Changing, 2:2 (July, 1971), 89-99.

Mehmet, Ozay. Methods of Forecasting Manpower Requirements with Special Reference to the Province of Ontario. Ottawa: Centre for Industrial Relations, Toronto University, February, 1969.

Miklos, E., et al. Perspectives on Educational Planning. Edmonton, Alberta: Human Resources Research Council, January, 1973.

"Models for Planning: Analysis of Literature and Selected Bibliography." Analysis and Bibliography Series, No. 5. Eugene, Oregon: ERIC Clearinghouse on Educational Administration, Oregon University, September, 1970.

Mullen, David J. "Involving Parents, Students, and Staff in Determining a Needs Assessment of Educational Priorities." Paper presented at the 53rd Annual Convention of the National Association of Elementary and Secondary Principals, Anaheim, California, April-May, 1974.

Needs Assessment in Education: A Planning Handbook for Districts. Handbook Series on Comprehensive Planning for Local Education Districts, No. 3. Trenton: New Jersey State Department of Education, Division of Research, Planning and Evaluation, 1974.

North Carolina Regional Medical Program. Guidelines on Area Health Education Systems. Durham: The Association for the North Carolina Regional Medical Program, 1973.

OECD Publications Center. Systems Analysis for Educational Planning: A Selected Annotated Bibliography. Paris, France: Organisation for Economic Co-operation and Development, 1969.

Piele, Philip. Planning Systems in Education. Eugene, Oregon: Center for the Advanced Study of Educational Administration, Oregon University, 1969.

Porter, G. W., and J. B. Hallan. Preliminary Planning for the Development of the Albemarle Area Health Education System. Raleigh, North Carolina: The Institute of Human Ecology, May, 1973.

Sarthory, Joseph A. Planning in Local School Districts. Project Kansas 76: Concept Paper. Topeka: Kansas State Department of Education, 1973.

Smith, Vivian S. "Cooperative Statewide Planning for Health Manpower Data in Oklahoma." Oklahoma City: Oklahoma Regional Medical Program, 1973.

State Planning Division. "North Carolina Multi-County Planning Regions." Raleigh: North Carolina State Department of Administration, July, 1970.

Statistical Services Section, Budget Division. "Profile: North Carolina Counties." Raleigh: North Carolina State Department of Administration, current edition.

Stone, Richard. Demographic Accounting and Model-Building. Education and Development Technical Report. Paris, France: Organisation for Economic Co-operation and Development, no date.

Street, Paul, et al. Research Procedures for Comprehensive Educational Planning: Curriculum and Instructional Practices. Lexington: University of Kentucky, Bureau of School Services, April, 1971.

"A Study of Educational Needs." ESEA Title III project. Lansing: Michigan Department of Education, 1969.

Sweigert, R. L., Jr. "Assessing Educational Needs to Achieve Relevancy." Education, 91:4 (April-May, 1971), 7-16.

Tempkin, Sanford. An Evaluation of Comprehensive Planning Literature with an Annotated Bibliography. Philadelphia, Pennsylvania: Research for Better Schools, Inc., June, 1971.

Trull, Raymond J. "A Brief Background of the Establishment of the Educational Objectives for 1975." Columbia: South Carolina State Department of Education, 1973.

Whatley, Earl. Personal Interview. Columbia, South Carolina, 1974.

APPENDICES

APPENDIX A

BACKGROUND INFORMATION ON AREA HEALTH EDUCATION SYSTEMS

RMP OBJECTIVES FOR AREA HEALTH EDUCATION SYSTEMS

BACKGROUND INFORMATION ON AREA HEALTH EDUCATION SYSTEMS

Pursuant to the enactment of Public Law 89-239 (the heart disease, cancer, and stroke amendments to the Public Health Act) and Public Law 91-515 (kidney and related diseases amendments), Regional Medical Programs Service (RMPS) was established within the Health Services and Mental Health Administration of the Department of Health, Education, and Welfare. Concurrently, 56 state-level Regional Medical Programs, among them the North Carolina Regional Medical Program (NCRMP), came into existence. In the spring of 1972, the NCRMP Regional Advisory Group developed four broad goals, each subsuming a number of objectives for the North Carolina Regional Medical Program which are both consistent with the guidelines and directives of RMPS and appropriate for North Carolina.

One of these goals involves assistance in "the development, efficient utilization and optimum distribution of qualified health care personnel throughout the state, with special attention to underserved areas, both rural and urban" (NCRMP, 1973). Specific objectives associated with this goal include the support of "systematic health manpower needs assessments based on previously determined standards of care, so that priorities may be established in the areas of manpower development, utilization and distribution"; the support of area-wide cooperative efforts between educational institutions and health care providers; the promotion of the distribution of health manpower in accordance with identified needs; and the promotion and support of more effective

educational methods and techniques in retraining or improving existing health care personnel.

The mechanism created by NCRMP for implementing the above goal and its accompanying objectives is the Area Health Education System (AHES). Area Health Education Systems are independent organizations formed by various local institutions and groups with provider interests in health care and education. Their mission is to improve the delivery of health care by relating the training of health manpower to the needs of the area which they serve. More specifically, AHES's are concerned with such activities as ensuring manpower retention in the community, recruiting and training new health professionals, fostering increased interest and participation of the lay community in health education, and matching and coordinating manpower and other resources with community needs.

In order to ensure that the goals and intent of the AHES concept would be systematically realized, NCRMP developed Guidelines on Area Health Education Systems for use by local areas within the state in developing proposals for potential AHES's. Among the operational criteria stipulated in the guidelines were the location of resources for both basic and continuing health education, the determination of continuing education needs for all categories of health professionals, and the establishment of clearly defined goals and objectives based on the needs of the area to be served.

RMP OBJECTIVES FOR AREA HEALTH EDUCATION SYSTEMS

The mission of AHES's is to improve the delivery of health care by relating the training of health manpower to the needs of the area in which they serve. Specific objectives as defined by the Regional Medical Program are graphically displayed in Figure 1. The seven objectives may be grouped into four related sets. The first set is concerned with expansion of work experiences and ensuring health manpower retention in the community. The second objective set deals with recruitment and training of new health professionals. The third objective set, which is concerned with the general population, is especially aimed at fostering grass roots participation in health education curricula and facilitating community health education activities. Finally, the fourth objective set deals with the matching of manpower resources with community needs. Thus, it can be surmised that an AHES will not only be a multi-faceted organization in terms of its activities but must possess the capabilities for action-oriented linkages with a variety of related community and federal programs. Because of the broad objectives and requisite linkages with existing programs, the AHES concept is a viable method for carrying out the intent of the Albemarle Human Resources Development System.

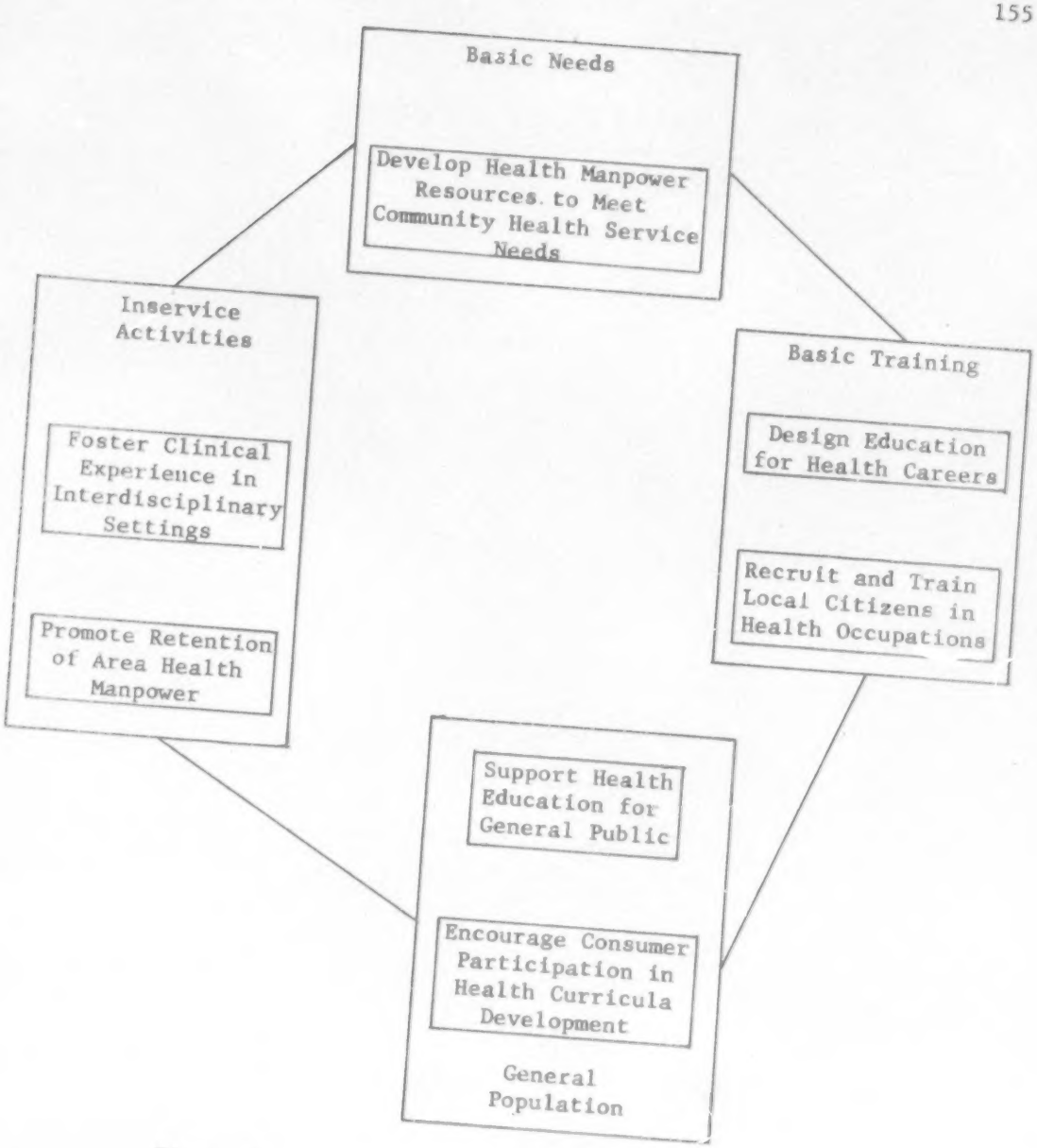
Basic Needs
Develop Health Manpower Resources to Meet Community Health Service Needs
Inservice Activities
Foster Clinical Experience in Interdisciplinary Settings
Promote Retention of Area Health Manpower
Basic Training
Design Education for Health Careers
Recruit and Train Local Citizens in Health Occupations
Support Health Education for General Public
Encourage Consumer Participation in Health Curricula Development
General Population

Figure 3. Graphic Display of AHES Objectives

APPENDIX B

NEEDS BY FREQUENCY AND PRIORITY

Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
001	42	15	Better Education	13	1	1				
002	69	29	How can I do my job better in my situation	19	5	2		2		1
003	17	7	How to be a good supervisor	3	4					
004	6	2	Abnormal hematology	2						
005	4	2	General Clinical Pathology Information		2					
006	23	9	Degree in own field	6	2	1				
007	6	2	Therapy concerning post op. and injury	2						
008	2	2	Delivery Room Techniques		1		1			
009	1	1	Interpretations of Chemical Reports			1				
010	8	6	EKG Information	1	1	3		1		
011	7	4	Defibrillator Information		3	1				
012	29	13	Emergency Room Knowledge	8	1	3		1		
013	6	3	Operating Room Procedures	2			1			
014	0	3	Oxygen Analysis in the Nursery				2	1		
015	8	6	Maternity, OB in general	2	1		3			
016	5	3	Know more about Gynecology		2	1				
017	12	7	More about diets and how to prepare them	3	1	1	2			
018	5	3	How to get other people to do their share of work		2	1				
019	17	6	Planning	5	1					
020	2	1	Controlling		1					
021	12	7	Communication	3	1	1	1		1	
022	4	3	Organizing	1		1	1			
023	0	1	Standards and Appraisals					1		
024	3	6	Motivation		1	1		2	1	1
025	0	1	Decision-Making							1
026	3	1	Up to date information in Nursing field	1						
027	28	12	More information in Pharmacology	6	4	2				

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Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
028	6	5	Instruction of "traction"	1		3		1		
029	2	1	Inhalation Therapy		1					
030	3	1	Emergency Room Situations when doctor unavailable	1						
031	2	1	Review of Resuscitative Measures		1					
032	1	2	Dynamics of Leadership			1	1			
033	0	1	Psychological needs of terminal patient					1		
034	1	2	Care of trach. patients			1			1	
035	8	3	Understand more about bookkeeping system	2	1					
036	10	4	Understand more about Insurance	2	2					
037	16	7	More about a Coronary Care Unit in hospital	3	3	1				
038	28	15	Care for heart patients in general	6	4	2	3			
039	0	1	Newborn Nursery				1			
040	18	13	X-ray Techniques (refresher course)	2	5	2	1	1	1	1
041	3	1	Refresher Course in Clinical Lab	1						
042	17	7	Abnormal test to specific disease	4	2	1				
043	0	2	More about surgery in general			1	1			
044	8	3	Respiratory diseases and Emphysema	2	1					
045	0	1	Diabetes Mellitus				1			
046	3	2	Burn Treatment	1				1		
047	17	10	Mental health in general	1	7		1		1	
048	3	2	Therapy for stroke patients	1				1		
049	1	2	Patient-nurse relationship (how to improve)			1	1			
050	2	2	Nurses raise?		1		1			
051	2	2	Better equipment (in hospital)		1			1		
052	6	3	Cooperation among departments	2					1	
053	10	4	Management planning courses	2	2					

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Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
054	1	1	Knowledge of new radiology techniques			1				
055	2	1	Types of linens and how to fold them		1					
056	3	1	More chemistry	1						
057	4	2	More algebra		2					
058	2	2	More biology			2				
059	3	2	More English and foreign languages	1			1			
060	3	1	CPR	1						
061	19	8	Chemotherapy	4	3	1				
062	3	3	Diabetic coma and Insulin shock information		1	1	1			
063	22	12	Drug Use and Abuse	5	3	1	2	1		
064	0	1	IPPB Therapy						1	
065	7	3	More Education in Public Health	2		1				
066	6	3	Education in Medicare and Medicaid	1	1	1				
067	8	3	Education in Money Management	2	1					
068	2	1	Experience with Respiratory Cases		1					
069	4	2	Prosthetic training and Orthodontics		2					
070	1	1	Athletic injuries			1				
071	4	2	Medications		2					
072	1	1	Charting			1				
073	3	1	Education in personnel matters	1						
074	3	1	What to do in emergency situations	1						
075	2	1	Intensive Care Unit in hospital		1					
076	4	3	Functions of medical records department		2			1		
077	18	7	More training in entire health field	5	1	1				
078	5	2	More information about nursing	1	1					
079	3	2	How to type		1	1				
080	0	1	Information on doctors' instruments				1			

Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
081	7	3	Training in speech and public speaking	2		1				
082	12	6	Training in counseling	2	3		1			
083	7	3	How to work with teenagers	2		1				
084	5	3	How to operate audio-visual aids		2	1				
085	4	3	Filing		1	2				
086	7	3	Family Planning Information	2		1				
087	9	5	Administrative Management	1	3				1	
088	3	2	Public Relations		1	1				
089	14	8	Psychology	3	2	1	2			
090	10	5	Behavior Modification	2	1	2				
091	19	9	Secretarial training	4	3	1	1			
092	4	2	Sociology	1		1				
093	1	2	Anatomy			1		1		
094	4	2	Information on different dental procedures	1		1				
095	2	1	Preparing dental materials		1					
096	3	1	Congenital birth defects information	1						
097	2	1	School health programs		1					
098	2	2	Policies			2				
099	1	2	V. D. Cases (detection and control)			1			1	
100	2	1	Help patients beyond hospital care		1					
101	3	2	Family planning in high schools	1			1			
102	3	5	Help with the alcohol problem			3	1		1	
103	3	1	Assessing health needs	1						
104	2	1	Utilization of health personnel		1					
105	4	4	Legalities regarding deliverance of health services		1	2	1			
106	2	1	Genetic Counseling		1					
107	1	1	Budget preparation			1				
108	0	1	Statistics				1			

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Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
109	3	2	Cancer program (detection and control)	1			1			
110	3	2	Catheter insertion and change		1	1				
111	1	1	Artificial respiration courses			1				
112	1	2	Physical therapy			1		1		
113	9	4	Food handling practices	2	1	1				
114	2	1	Disease transmission		1					
115	2	1	Micro-biology		1					
116	1	1	Chemical analysis of water			1				
117	0	1	Sewage treatment plants				1			
118	0	1	Soil Studies					1		
119	0	1	Air pollution						1	
120	0	1	Shellfish sanitation							1
121	3	1	Heart sounds in pediatric physicals	1						
122	5	2	Pap smear preparations	1	1					
123	4	2	No opportunity for advancement in position	1		1				
124	3	1	Drugs in eye care (what types)	1						
125	3	2	Physical and physiological problems of patients with eye disorders		1	1				
127	37	17	Information about lab work and techniques	10	2	3	2			
128	5	2	How to educate public in oral hygiene	1	1					
129	6	3	Deal with pediatric patients	1	1	1				
130	2	1	More development at vision		1					
131	11	6	First aid courses	2	2	1	1			
132	1	1	Training in personality disorders			1				
133	2	2	Psychoses and Neuroses		1		1			
134	3	1	Preventive Medicine	1						
135	2	1	More rounded (uniform) program		1					
136	1	2	Group therapy			1		1		

Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
137	8	4	Interview techniques	2	1		1			
138	3	3	Current literature	1				2		
139	3	2	Geriatrics		1	1				
140	3	1	Group therapy with children	1						
141	2	1	Group therapy with parents with problem children		1					
142	2	1	Facilities for mentally ill (halfway house)		1					
143	2	1	Program evaluation		1					
144	0	1	Inter-agency "swap" of information				1			
145	6	2	Discipline problems of school-age children	2						
146	1	1	Aid in transportation			1				
147	0	1	Increase in cost of transportation				1			
148	2	1	How to take blood pressures		1					
149	3	1	Work more hours	1						
150	1	1	Better chemistry lab (how to set up)			1				
151	3	1	How to get people to pay doctor bills	1						
152	5	2	Spelling	1	1					
153	3	1	How to take care of male patient	1						
154	0	2	More about oxygen				2			
155	1	2	Blood Banking information			1	1			
156	2	1	Basic state laws for minor offenses		1					
157	1	1	Courses in police work			1				
158	0	1	Courses in sign language					1		
159	2	3	Nuclear medicine		1		1	1		
160	35	13	Medical terminology	9	4					
161	3	2	Sterile techniques	1			1			
162	2	1	Shortage of help		1					
163	2	1	Chest tube drainage information		1					

Needs by Frequency and Priority

Need #	Priority Score[1]	Total Frequency	Need	Frequency Count: Priority Needs 1	2	3	Other Needs 4	5	6	7
164	3	1	How to read monitors	1						
165	11	4	Drug interactions	3	1					
166	2	2	Convalescent supplies usage			2				
167	3	1	Refresher courses on medical subjects, environmental sciences and related fields	1						
168	1	1	School law classes			1				
169	5	2	Surgical appliances	1	1					
170	5	2	Ostomy care	1	1					
171	1	1	Computerized medicine			1				
172	0	1	Telephone diagnosis					1		
173	2	1	Etiology		1					

[1]Priority Score = 3 (Priority Need 1) + 2 (Priority Need 2) + 1 (Priority Need 3).

APPENDIX C

SURVEY OF EDUCATIONAL NEEDS OF HEALTH WORKERS

SURVEY OF HOSPITALS

SURVEY OF PUBLIC HEALTH AGENCIES

SURVEY OF MENTAL HEALTH AGENCIES

SURVEY OF SOCIAL SERVICE AGENCIES

SURVEY OF EDUCATIONAL INSTITUTIONS

SURVEY OF HEALTH PROFESSIONALS AND EMPLOYERS OF HEALTH WORKERS

_____

_____

_____

_____

_____

_____

III. Now that you have listed as many education and training needs as you think you have, please go back to that list and place a "1" beside the most important need of all, a "2" beside the next most important, and a "3" beside the third most important.

IV. Use this space for listing additional needs or for making additional comments.

ALBEMARLE AREA HEALTH EDUCATION
SYSTEM SURVEY OF EDUCATIONAL
NEEDS OF HEALTH WORKERS

TO: All Health Workers in the Albemarle Area

Management persons at your institution, health agency or office are cooperating with us in an effort to find out what kinds of additional training or education you think you need in order to either do a better job as a health worker in your present position or to move up to the job you would like to have.

This survey is very important. We believe that the only sensible way to plan for the provision of better inservice training and college and technical institute programs in the health field is to ask you, as a health worker, what your needs are. The information gathered from you will be used to plan better and more useful programs.

Please fill out this survey blank as soon as you can and return it in the envelope provided.

YOU DO NOT NEED TO PUT YOUR NAME ON THIS SURVEY BLANK.

Sincerely,

Howard Campbell, Chairman
Executive Board, Albemarle
Human Resources Development
System

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EDUCATIONAL NEEDS SURVEY
ALBEMARLE AHES PROJECT

I. Please answer these questions about yourself.

1. How old are you? ____ 2. Circle sex F M

3. What is the title of your present position?_____

4. How many years have you held this position?_____

5. How many years in total have you worked in the health field?_____

6. Where do you work?_____
_____
(Example: Albemarle Hospital, private physician's office, etc.)

7. How many hours per week do you work in your health related job?_____

8. How much education have you had? (Please check highest blank which applies.)

____ A. Some high school
____ B. High school graduate
____ C. Some college (no degree)
____ D. Certificate, diploma or degree. Please specify those held_____
_____
(Examples: L.P.N., A.A., R.N., B.S., etc.)

II. Please help us to determine your needs for additional education and training. In the space below, list the education or training needs which you think would make you a better health worker. List as many as you can which directly apply to you. Be as specific as possible. If you need more space, use the next page.

Some examples of specific educational needs are shown below:

Position Title	Need
Nurse	"I need to know more about chemotherapy."
Orderly	"I need to know more about assisting with oxygen therapy."
Mental Health Worker	"I need to know more about behavior modification."

If you have a need to learn how to operate a special piece of equipment or how to perform a specific task, list those, too.

List your needs for further education and training here. Please list as many as you can.

_____

_____

_____

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ALBEMARLE AREA HEALTH EDUCATION

SURVEY OF HOSPITALS

Name of Hospital_____

Address_____
Street or P.O. Box City State Zip Code

Telephone Number_____
Area Code Number

Administrator_____
Name

Respondent_____
Name Title

Date_____

PLEASE RETURN BY NOVEMBER 15, 1972

STAFF EDUCATION AND TRAINING NEEDS

In Column A indicate the number of staff in each position currently employed.

In Column B rank from 1 to 5 the most critical category of manpower shortage you are experiencing (i.e. most critical manpower need - PHN I: 1; second most critical - Lab. Tech: 2, etc.).

In Column C rank from 1 to 5 the staff positions most in need of in-service and continuing education.

In Column D rank from 1 to 5 the staff positions most in need of career ladder mobility programs.

Position	A Number of Full-Time Positions	B Most Critical Manpower Shortage	C Most Critical Need for In-Service and Continuing Education	D Most Critical Need for Career Ladder Mobility Programs
Anesthesiologist				
Anesthetist				
Dietitian, Nutritionist				
Dentist				
EKG Technician				
Executive Housekeeper and Assistants				
Hospital Administration Staff				
Respiratory Therapist				
Medical Librarian				
Maintenance				
CLA				
Medical Lab. Tech.				
Medical Secretaries/Clerks				
Medical Social Worker				
Neighborhood Health Workers				
Nurses: Administrative				
R.N.				
L.P.N.				
Nurse Clinicians				
Family Nurse Practitioners				
Nursing Assistant				

Position	A Number of Full-Time Positions	B Most Critical Manpower Shortage	C Most Critical Need for In-Service and Continuing Education	D Most Critical Need for Career Ladder Mobility Programs
Ward Clerk				
CSR				
Orderlies				
Ambulance Attendants				
Operating Room Technicians				
Pharmacist				
Pharmacy Clerks				
Physicians and Surgeons:				
ENT's				
General Family Practitioners				
Internists				
OB/GYN				
Ophthalmologists				
Orthodontists				
Orthopedic Surgeons				
Pathologists				
Pediatricians				
Psychiatrists				
Other Specialties (Please Specify)				
_____				
_____				
_____				
Occupational Therapists				
Physician Assistants				
Physical Therapists				
Physical Therapist Aides				
Recreational Therapists				
Radiologists				
X-Ray Technicians				
Other Staff (Please Specify)				
_____				
_____				
_____				

Comment on Any Specific Educational Needs of Staff Below:

Anesthesiologist _____

Anesthetist _____

Dietitian, Nutritionist _____

Dentist _____

EKG Technician _____

Executive Housekeeper and Assistants _____

Food Service Personnel _____

Hospital Administration Staff _____

Respiratory Therapist _____

Medical Librarian _____

Maintenance _____

CLA _____

Medical Lab. Technician _____

Medical Secretaries/Clerks _____

Medical Social Worker _____

Neighborhood Health Workers _____

Nurses: Administrative _____

R. N. _____

L. P. N. _____

Nurse Clinician _____

Family Nurse Practitioners _____

Nursing Assistant _____

Ward Clerk _____

CSR _____

Orderlies _____

Ambulance Attendant _____

Operating Room Technician _____

Pharmacist _____

Pharmacy Clerk _____

Physicians and Surgeons

ENT _____

General Family Practitioner _____

Internist _____

OB/GYN _____

Ophthalmologist _____

Orthodontist _____

Orthopedic Surgeon _____

Pathologist _____

Pediatrician _____

Psychiatrist _____

Other Specialties: Specify _____

_____

Physician Assistant _____

Physical Therapist _____

Physical Therapist Aide _____

Recreational Therapist _____

Radiologist _____

X-Ray Technician _____

Other Staff: Specify _____

_____

Turnover Rate for Previous Calendar Year:

1. Medical Staff — % = # of active staff who left / Maximum # of active staff

2. Nursing Staff (full-time equivalent) — % = # of R. N. and L. P. N. who left / Maximum # of R. N. and L. P. N.

3. Housekeeping and Food Service Personnel — % = # of Hsk. and F. S. P. who left / Maximum # of Hsk. and F. S. P.

ON-SITE HEALTH EDUCATION AND TRAINING

Circle Yes or No

A. Do you have an Education Committee? Yes No

1. Do you have a Director of hospital-wide in-service or continuing education? Yes No

_____ Name
_____ Title
% of time spent _____

2. For nurses? Yes No

_____ Name
_____ Title
% of time spent _____

3. For physicians? Yes No

_____ Name
_____ Title
% of time spent _____

4. For allied health personnel? Yes No

_____ Name
_____ Title
% of time spent _____

B. Do you have, in your operating budget, an allocation specifically for in-service and/or continuing education? Yes No

C. Is there a formal system for assessment of training and educational needs of staff? (manpower needs, up-grading, in-service, job performance, etc.) Yes No

1. If so, describe _____
_____
_____

2. Has a functional task analysis ever been conducted on any staff positions? If yes, which positions? Yes No

_____
_____

3. Has the hospital recently conducted (or have plans to conduct) education or manpower needs surveys? Please attach any applicable information. Yes No

D. Education and Training Programs

1. General Orientation for New Staff — Yes No

2. Formal Educational Programs

   a. Medical School Affiliation — Yes No
   b. Residency and Internship Programs — Yes No
   c. Extern or Summer Student Programs — Yes No
   d. Professional Nursing School — Yes No
   e. Affiliated Nursing Students — Yes No
   f. Other, Specify — Yes No

   _____
   _____
   _____

3. Hospital In-Service Training Programs (On-Site) - List Examples — Yes No

   _____
   _____
   _____
   _____
   _____
   _____

4. Patient Educations Programs 1971-1973

   Do you conduct patient education programs on an organized basis for:

   a. groups of patients? — Yes No
   b. individual patients? — Yes No

   List examples:

   _____
   _____
   _____
   _____

5. Patient's Family Education — Yes No

6. Other Patient Education — Yes No

   Specify

   _____
   _____
   _____

7. Organized Hospital-Sponsored Health Education Activities for the Non-patient Population in Community. Yes No

If so, the nature and frequency of these programs, (e.g., lecture series on drug abuse for high school students 3 times a year; distribution of literature on smoking.)

_____
_____
_____
_____
_____

EDUCATION AND TRAINING

FACILITIES, MATERIAL, AND EQUIPMENT

A. Clinical Facilities and Services

Number of Beds_____ No. of Bass._____ Av. Census_____

Type of Control_____
(e.g., non-profit, municipal, private, etc.)

		Circle Yes or No	
1.	Post-operative recovery room	Yes	No
2.	Intensive care unit	Yes	No
3.	Coronary care unit	Yes	No
4.	Premature nursery	Yes	No
5.	Organized emergency care dept.	Yes	No
6.	Organized outpatient dept.	Yes	No
	a. Physician clinics	Yes	No
	b. Nurse clinic	Yes	No
7.	Electroencephalography	Yes	No
8.	Extended care facility as part of the hospital service	Yes	No
9.	Affiliation agreement with other extended care facilities	Yes	No
10.	Home care program	Yes	No
11.	Inhalation therapy department	Yes	No
12.	Pathology lab with pathologist	Yes	No
13.	Dental facilities	Yes	No
14.	Pharmacy with reg. pharmacist	Yes	No
15.	Physical therapy dept.	Yes	No
16.	Rehabilitation inpatient unit	Yes	No
17.	Psychiatric inpatient unit	Yes	No
18.	Social work department	Yes	No
19.	Others: Specify	Yes	No

B. Training Facilities

Do you have facilities for on-site educational programs? Yes No

			Present Number	Seating Capacity
Classrooms	Yes	No		
Conference Rooms	Yes	No		
Library	Yes	No		
Cafeteria	Yes	No		

Note: Please attach any written policies and procedures for advanced scheduling and contract arrangements for facilities.

Would you be willing to share equipment if a proper system were developed? Yes No

C. Materials

1. Do you have a printed listing or catalog of all health-related magazines, journals, newsletters, etc.? Yes No

2. If no, do you have plans to develop such a listing? Yes No

3. Could this list be made available to other institutions and health care agencies? Yes No

4. Do you have a printed listing of films, filmstrips, transparencies, etc. which could be made available? Yes No

5. If no, do you have plans to develop such a listing? Yes No

6. Other materials, facilities, equipment?
Comments: _____
_____
_____

COORDINATION

Listed below are some examples of coordination which could exist between hospitals and other resources.

Circle Yes or No

A. Examples of Coordination of Health Education

1. Have you solicited assistance from a medical school in the development of physician education programs in your hospital within the past two (2) years? Yes No

2. Are there interhospital nursing education programs (collaboration in planning or execution with another hospital)? Yes No

3. Are there interhospital physician education programs (collaboration in planning or execution with another hospital)? Yes No

4. Has the hospital used outside consultants during the past two (2) years in the following areas:
   a. Physician education Yes No
   b. Nursing education Yes No
   c. Hospital administration and planning Yes No
   d. Allied health education Yes No
   e. Other: Specify_____ Yes No

5. Do you presently share training facilities, equipment, or materials with other institutions or agencies for the purpose of health education? Yes No

   If so, please list examples:

Institution	Facilities, Equipment, or Materials Shared

B. List all community agencies, organizations, groups, etc. with which your institution has cooperated and/or coordinated within the past year in order more effectively to deliver health care education.

Name of Outside Organization Coordinated With	For What Purpose
Other hospitals	
Community colleges	
Industry	
Public health agencies	
Mental health programs	
Local physicians', nurses', dentists' associations	
Nursing homes, rescue squads, etc.	

C. List any other examples of coordination and cooperation with other institutions which would make the delivery of health education more efficient and more effective in your area.

ALBEMARLE AREA HEALTH EDUCATION SYSTEM

SURVEY OF PUBLIC HEALTH AGENCIES

Name of Agency_____

Address_____
Street or P. O. Box City State Zip

Telephone _____
Area Code Number

Health Director or
Administrator _____
Name

Respondent_____
Name Title

Area, Counties, or Districts Served_____

_____

Date_____

PLEASE RETURN BY DECEMBER 15, 1972

I. Current Facilities and Services

Listed below are typical public health medical facilities and services. Please indicate (✓) which services are available through your health department. Indicate whether the service is daily, weekly, monthly, etc.

	Daily	Weekly	Semi-Monthly	Monthly	Other
Diabetic Screening Clinic					
Cancer Screening Clinic					
Vasectomy Clinic					
Maternity Clinics:					
A. Pre-natal					
B. Post-natal					
C. Family Planning					
Immunization Clinic					
Eye Clinic					
T.B. (Chest) Clinic					
Glaucoma Screening Clinic					
Home Health Care Services					
Pediatric Clinic					
Nurse Screening Clinic (Pediatric)					
Developmental Evaluation Clinic (Special)					
Orthopedic Clinic					
General Clinic					
V.D. Clinic					
Dental Health Services					

	Daily	Weekly	Semi-Monthly	Monthly	Other
X-Ray Department					
Multi-phasic Screening Clinic					
Outlying Clinics - Specify Locations and Facility					
_____					
_____					
_____					
_____					
_____					
Others: Specify_____					
_____					
_____					

II. Education and Training Needs

A. In Column A indicate the number of staff in each position currently employed.

In Column B rank from 1 to 5 the most critical category of manpower shortage you are experiencing (i.e., most critical manpower need - PHN II: 1; second most critical - Lab. Tech: 2; etc.).

In Column C rank from 1 to 5 the five staff positions most in need of inservice and continuing education.

In Column D rank from 1 to 5 the five staff positions most in need of career ladder mobility programs.

Position	A Number of Full-Time Positions	B Most Critical Manpower Shortage	C Most Critical Need for Inservice and Continuing Education	D Most Critical Need for Career Ladder Mobility Programs
Health Administrator				
Physician				
Dentist				
Nurses:				
PHN Supervisor				
PHN II				
PHN I				
General Duty				
Personal Care and Family Aide				
Sanitarian				
Dog Warden				
X-ray Technician				
Medical Social Worker				
Lab Technician				
Health Educator				
Other: Specify				
_____				
_____				
_____				

B. Comment on Specific Staff Education and Training Needs Below:

Health Administrator _____

Physician _____

Dentist _____

Nurses: PHN Supervisor _____

PHN II _____

PHN I _____

LPN _____

General Duty _____

Personal Care and Family Aide _____

Sanitarian _____

Dog Warden _____

X-Ray Technician _____

Medical Social Worker _____

Lab Technician _____

Health Educator _____

Other: Specify

_____ _____

_____ _____

_____ _____

Is there a formal system for the assessment of training and educational needs of staff? Yes No

If so, describe _____

_____

C. Internal Education and Training Programs — Circle Yes or No

General Orientation for New Staff Yes No

Inservice Training Programs Yes No

Examples of 1971-72 Inservice Training

Program	For Which Staff

Plans for 1973-1975 Inservice Training

_____

_____

D. Patient and General Community Education Programs

List 1971-72 Patient and Community Educational Programs

Title of Program	For Which Group*

List Plans for 1973-1975 Patient and Community Educational Programs

Title of Program	For Which Group*

III. Education and Training Facilities and Materials

Listed below are typical facilities and materials necessary to conduct health education programs. Indicate those resources under your agency's control.

A. Facilities

	Total Number	Number Available**	Seating Capacity
Classrooms			
Conference Rooms			
Library			
Cafeteria			

*e.g., schools, general public, etc.

**Indicate only those facilities which could be made available for shared usage with advanced scheduling.

B. Materials — Circle Yes or No

1. Do you have a printed listing of films, filmstrips, transparencies, etc., which could be made available to other institutions and health care agencies? Yes No

   If no, do you plan to develop such a listing? Yes No

2. Do you have a printed list or catalog of all health-related magazines, journals, newsletters, etc., which are available at your office and which could be made available to other institutions and health care agencies? Yes No

   If no, do you plan to develop such a listing? Yes No

3. Do you presently share training facilities, equipment or materials with other institutions for the purpose of health education? Yes No

   If so, please list examples.

Institution	Facilities, Materials Shared
_____	_____
_____	_____

4. Other materials, facilities? Comments:

   _____

   _____

   _____

5. Has your institution conducted any recent surveys regarding health education manpower needs? Yes No

   If so, please attach results.

IV. Coordination

Listed below are some examples of possible linkages among public health, health-related, and health education institutions for the express purpose of health training and education. Indicate coordination which exists and for what purpose between your agency and another.

Institutions	Purposes
Hospitals	_____
Individual Physicians or Nurses	_____
Mental Health Programs	_____
Vocational Rehabilitation	_____
Social Services	_____
Dept. of Public Instruction	_____
Community Colleges	_____
Colleges and Universities	_____
Other Community Health-related Organizations: Specify	
_____	_____

Has your agency conducted any recent surveys or studies regarding health education needs of staff, consumers (public), etc., which could be made available? Yes No

If so, please attach results.

Who in your agency is responsible for coordinating health education activities with external resources?

_____ _____
Name Title

List and describe any other areas in which you see a need for coordination of health education activities--i.e., examples in which

coordination and any cooperation between your agency and other regional or community resources would result in more effective and efficient health education.

ALBEMARLE AREA HEALTH EDUCATION SYSTEM

SURVEY OF MENTAL HEALTH AGENCIES

Name_____

Location_____

Telephone_____
Area Code Number

Administrator_____
Name Title

Respondent_____
Name Title

Date_____

County/Counties/Districts Served_____

_____

PLEASE RETURN BY DECEMBER 1, 1972

I. Services		Circle Yes or No	
One-to-One Counseling		Yes	No
Group Counseling		Yes	No
Family Counseling		Yes	No
Marriage Counseling		Yes	No
Services to:	School Children	Yes	No
	Correctional Institutions and/or Services	Yes	No
	Retarded Persons	Yes	No
	Alcoholics and/or their Families	Yes	No
Day-Care Programming for Retarded:			
	Children	Yes	No
	Adults	Yes	No
Day-Care for Others		Yes	No
Psychological Testing		Yes	No
Consultant Services to Other Professions		Yes	No
Public Information Programs		Yes	No

Specify 1971-1973_____

_____

_____

Education/Training Programs for Other Professions Yes No

Specify 1971-1973_____

_____

_____

II. Education and Training Needs

A. Staff Needs

In Column A indicate the number of staff in each position currently employed in your program.

In Column B rank from 1 to 3 the three most critical categories of manpower shortage you are experiencing (i.e., most critical manpower need - Psychiatrists: 1; second most critical shortage - Social Worker: 2; and so on).

In Column C rank from 1 to 3 the three staff positions most in need of inservice and continuing education.

In Column D rank from 1 to 3 the staff positions most in need of programs for career ladder mobility.

Position	A Number of Full-Time Positions	B Most Critical Manpower Shortage	C Most Critical Need for Inservice and Continuing Education	D Most Critical Need for Career Ladder Mobility Programs
Alcoholism Coordinator				
Community Mental Health Educator				
Mental Health Aide				
Mental Health Nurse				
Outreach Workers for Aftercare				
Patient Advocate				
Psychiatric Social Worker				
Psychiatrist				
Psychologist				
Other: Specify				
_____				
_____				
_____				
_____				

B. Comment on Any Specific Staff Education and Training Needs Below:

Alcoholism Coordinator _____

Community Mental Health Educator _____

Mental Health Aide _____

Mental Health Nurse _____

Outreach Workers for Aftercare _____

Patient Advocate _____

Psychiatric Social Worker _____

Psychiatrist _____

Psychologist _____

Other: Specify

_____ _____

Is there a formal system for the assessment of training and educational needs of your staff? Yes No

If so, describe _____

_____

_____

C. Internal Education and Training Programs — Circle Yes or No

General Orientation for New Staff Yes No

Inservice Training Programs for Staff Yes No

Orientation and/or Inservice Training for Volunteers Yes No

List examples of 1971-72 Inservice Training

Program Title	For Which Staff

Describe plans for 1973-75 Inservice Training

D. Patient and General Community Education Programs

List 1971-72 Patient and Community Educational Programs

Program Title	For What Group*

III. Education and Training Facilities and Materials

Listed below are typical facilities and materials necessary to conduct health education programs. Indicate those resources under your agency's control.

*i.e., schools, general public, teenagers, etc.

A. Facilities

	Total Number	Number Available*	Seating Capacity*
Classrooms			
Conference Rooms			
Library			

Note: Please attach any written policies and procedures for making necessary arrangements for reserving space.

B. Materials — Circle Yes or No

1. Do you have minimally adequate training materials and equipment for your own agency? Yes No

2. Do you have a printed listing of films, filmstrips, transparencies, etc., which could be made available to other institutions and health care agencies? Yes No

3. Do you have a printed list or catalog of all health-related magazines, journals, newsletters, etc., which could be made available to other institutions and health care agencies? Yes No

   If no, do you plan to develop such a listing? Yes No

4. Do you presently share training facilities, equipment or materials with other institutions for the purpose of health education? Yes No

   If so, please list examples.

Institution	Facilities, Equipment or Material Shared
_____	_____
_____	_____

*Indicate only those facilities which could be made available for shared usage with advanced scheduling.

5. Other materials, facilities, equipment? Comments:

_____

_____

_____

_____

IV. Coordination

Listed below are examples of possible linkages between mental health programs and other health care and health education institutions for the express purpose of training and education. Indicate coordination which exists and for what purpose between your agency and others. (Example: Co-sponsorship of staff training in diagnosis and referral.)

Institutions	Purposes
Hospitals: Private General	
Regional Mental	
Private Psychiatric	
Private Practice:	
Psychiatrists	
Physicians	
Other Mental Health Programs	
Vocational Rehabilitation	
Dept. of Social Services	
Dept. of Public Instruction	
Community Colleges/Tech. Schools	
Colleges and Universities	
Sheltered Workshops	
Regional Alcohol Rehab. Centers	

Institutions	Purposes
National, State, or Regional Associations (Specify)	
Others:	

Circle One

Has your agency conducted any recent surveys or studies regarding health education needs of staff, consumer (public), etc., which could be made available? Yes No

If so, please attach any results.

Who in your agency is responsible for coordinating mental health education activities with external resources?

Name Title

List and describe any other areas in which you see a need for coordination of mental health educational activities--i.e., examples in which coordination and cooperation between your agency and other regional or community resources would result in more effective and efficient mental health education.

PLEASE RETURN BY DECEMBER 1, 1972

ALBEMARLE AREA HEALTH EDUCATION SYSTEM

SURVEY OF SOCIAL SERVICE AGENCIES

Name of Agency_____

Address_____
Street or P. O. Box City State Zip

Telephone_____
Area Code Number

Director or Administrator_____
Name

Respondent_____
Name Title

Area, Counties, or Districts Served_____

_____

_____

Date_____

PLEASE RETURN BY FEBRUARY 5

I. Current Services to Individuals

Please indicate whether the following services are offered by your agency directly, by your agency through referral, or not available through your agency. If a service is offered both directly and through referral, depending upon the circumstances, check both columns.

Service	Direct	Through Referral	Not Available
Adoption			
Boarding Homes/Foster Homes/ Residential Facilities for:			
Aged			
Blind			
Developmentally disabled			
Infants			
Orphans to age _____			
Mentally retarded			
Others (Specify) _____			
_____			
_____			
Counseling:			
Alcoholism			
Individual			
Family Planning			
Genetic			
Group			
Marriage/Family			
Other (Specify)_____			
_____			
_____			
Day Care for:			
Mentally Retarded			
Children			
Adults			
Others (Specify)_____			
_____			
_____			
Diagnosis:			
Medical			
Psychological			
Other (Specify)_____			
_____			
_____			

Service	Direct	Through Referral	Not Available
Homemaking Services			
Self-Care Skills Training			
Sheltered Workshops			
Other Services to Individuals: (Specify) _____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			

II. Current Services to Other Groups — Circle Yes or No

Consultant services to other professions — Yes No

Education or training programs for other professions. (Specify nature of program and professional group served 1971-73.) — Yes No

_____
_____
_____
_____
_____
_____

Public information programs. (Specify nature of program and target group 1971-73.) — Yes No

_____
_____
_____
_____
_____

III. Education and Training Needs

A. Staff Needs

In Column A indicate the number of staff in each position currently employed in your program (if part-time indicate as percentage of full-time).

In Column B rank from 1 to 3 the three most critical categories of manpower shortage you are experiencing. (i.e., most critical manpower need - Eligibility specialist: 1; second most critical shortage - Adoption workers: 2; and so on).

In Column C rank from 1 to 3 the three staff positions most in need of inservice and continuing education.

Position	A Number of Full-Time Positions	B Most Critical Manpower Shortage	C Most Critical Need for Inservice and Continuing Education
Adult Service Specialist			
Adoption Worker			
Child Welfare Worker			
General Social Worker			
Juvenile Court Probation Worker			
Medical Social Worker			
Eligibility Specialist			
Homemaker			
Nurses Aide (ESEA)			
Volunteer			
Other: Specify_____			
_____			
_____			
_____			

B. Comment on Any Specific Staff Education and Training Needs Below

Adult Service Specialist _____

Adoption Worker _____

Child Welfare Worker _____

General Social Worker _____

Juvenile Court Probation Worker _____

Medical Social Worker _____

Eligibility Specialist _____

Homemaker _____

Nurses Aide (ESEA) _____

Volunteer _____

Other: Specify _____ _____

_____ _____

_____ _____

_____ _____

Circle Yes or No

Is there a formal system for the assessment of training and educational needs of your staff? Yes No

If so, describe _____

_____

_____

C. Internal Education and Training Programs — Circle Yes or No

General Orientation for New Staff Yes No

Inservice Training Programs for Staff Yes No

Orientation and/or Inservice Training for Volunteers Yes No

List examples of 1971-72 Inservice Training

Program Title or Topic	For Which Staff
_____	_____
_____	_____
_____	_____

Describe plans for 1973-75 Inservice Training

_____

_____

_____

_____

D. Client and General Community Education Program

List 1971-72 Client and Community Educational Programs

Title of Program	For What Group*
_____	_____
_____	_____
_____	_____
_____	_____

IV. Materials

	Circle Yes or No	
1. Do you have minimally adequate training materials and equipment for your own agency?	Yes	No
2. Do you have a printed listing of films, filmstrips, transparancies, etc., which could be made available to other institutions and health care agencies?	Yes	No
If no, do you plan to develop such a listing?	Yes	No
3. Do you have a printed list or catalog of all health-related magazines, journals, newsletters, etc., which could be made available to other institutions and health care agencies?	Yes	No
If no, do you plan to develop such a listing?	Yes	No

*i.e., schools, general public, teenagers, etc.

4. Do you presently share training facilities, equipment or materials with other institutions for the purpose of health education? Yes No

If so, please list examples.

Institution	Facilities, Equipment or Material Shared

5. Other materials, facilities, equipment? Comments:

Circle Yes or No

Has your agency conducted any recent surveys or studies regarding education needs of staff, consumer (public), etc., which could be made available? Yes No

If so, please attach any results.

Who in your agency is responsible for coordinating social services education activities with external resources?

Name Title

List and describe any other areas in which you see a need for coordination of social service activities with health educational activities--i.e., examples in which coordination and cooperation between your agency and other regional or community resources would result in more effective and efficient health education.

PLEASE RETURN BY FEBRUARY 5, 1973

ALBEMARLE AREA HEALTH EDUCATION SYSTEM

SURVEY OF EDUCATIONAL INSTITUTIONS

Name of Institution_____

Address_____
Street or P. O. Box City State Zip

Telephone_____
Area Code Number

President or Chief Administrative Officer_____

Person Responsible for Vocational
and Technical Education_____

Number of Faculty: Full-time_____ Part-time_____

Number of Students: Day_____ Evening_____

Control or Affiliation (e.g., public, private-Methodist, proprietary)

_____

Accredited by_____

Respondent_____
Name Title

Date_____

☐ Check this box ONLY if your institution offers NONE of the health-related programs indicated on pages two and three AND has no plans to offer any health-related programs in the next two years. For institutions in the above situation, this is the end of the questionnaire.

PLEASE RETURN BY JANUARY 15

I. HEALTH-RELATED EDUCATIONAL OFFERINGS: COLLEGE AND UNIVERSITY PROGRAMS

Listed below are typical curriculum offerings in health education. For each program offered, please indicate: (1) length of program (only if different from usual length), (2) accrediting agency, (3) present enrollment capacity, (4) current enrollment, (5) current number of instructors, and (6) 1975 projected enrollment capacity.

Curriculum Offering	Length (yrs.)	Accreditation	Present Capacity	Current Enrollment	Current Number of Instructors	1975 Proj. Enrollment Capacity
Master's Degree Programs:						
Audiology						
Clinical Psychology						
Dietetics						
Environmental Health						
Medical Records Librarianship						
Nursing						
School and/or Community Health Education						
Social Work and/or Correctional Science						
Speech Pathology						
Vocational Rehabilitation Counseling						
Other: Specify						
Bachelor's Degree Programs:						
Audiology						
Clinical Psychology						
Dietetics						
Environmental Health						
Inhalation Therapy						
Institutional Management						
Medical Records Librarianship						

Curriculum Offering	Length (yrs.)	Accred-itation	Present Capa-city	Current Enroll-ment	Current Number of Instructors	1975 Proj. Enrollment Capacity
Bachelor's Degree Programs (cont'd.): Medical Technology						
Music Therapy						
Nursing						
Occupational Therapy						
Physical Therapy						
Pre-medicine						
Recreation Therapy						
School and/or Community Health Education						
Social Work and/or Correctional Science						
Speech Pathology						
Vocational Rehabilitation Counseling						
Other: Specify						

I. HEALTH-RELATED EDUCATIONAL OFFERINGS: COMMUNITY COLLEGES AND TECHNICAL INSTITUTES

Listed below are typical curriculum offerings in health education. For each program offered, please indicate: (1) length of program (only if different from usual length), (2) accrediting agency, (3) present enrollment capacity, (4) current enrollment, (5) current number of instructors, and (6) 1975 projected enrollment capacity.

Curriculum Offering	Length (yrs.)	Accreditation	Present Capacity	Current Enrollment	Current Number of Instructors	1975 Proj. Enrollment Capacity
Associate Degree Nursing						
Dental Assistant Technologies						
Dental Hygiene Technologies						
Electro-Diagnostic Technologies						
Health Professions Assistant						
Hospital Ward Assistant						
Inhalation Therapy Technology						
Medical Office Assistant						
Medical Laboratory Assistant						
Mental Health Associate						
Nurse Assistant (Aide)						
Occupational Therapy Technology						
Operating Room Assistant						
Physical Therapy Assistant						
Radiologic Technician (X-Ray)						
Recreation Therapy Technology						
Health Occupations Technology						
Other: Specify						

II. PROJECTED HEALTH-RELATED CURRICULUM OFFERINGS (1975)
CREDIT COURSES OR PROGRAMS

List all full-time and part-time curriculum offerings planned for implementation by 1975.

Planned Curriculum Offering	Length of Program	Projected Enrollment Capacity	Projected Number of Instructors	Comments

III. CONTINUING EDUCATION AND INSERVICE COURSES

List all health-related continuing education or inservice courses (credit or non-credit) which have been offered in 1972-1973 or which will be offered in 1973-1974.

(Examples: OSHA Seminars; Refresher for Industrial Nurses; Preparation for Parenthood)

Title of Course, Workshop, Seminar, etc.	Projected or Actual Number of Participants	Length of Program (Contract Hours)	Group, Agency, Institutions, etc. Offered to or for*	Comments

*Be specific: i.e., Albemarle Hospital R.N.'s; Public-at-large, etc.

ATTACH ADDITIONAL SHEETS IF NECESSARY

IV. EDUCATION AND TRAINING FACILITIES AND MATERIALS

Listed below are typical facilities and materials necessary to conduct health education programs. Indicate those resources existent at your institution.

Facilities

	Total Number	Number Available	Seating Capacity*	Projected 1975 Number*	Projected 1975 Seating*
Classrooms					
Conference Rooms					
Library					
Cafeteria					

NOTE: Please attach any written policies and procedures for making necessary arrangements for reserving space.

Materials

	Circle Yes or No	
Do you have minimally adequate training materials and equipment for your own agency?	Yes	No
Do you have a printed list of films, filmstrips, transparencies, etc. which could be made available to other institutions and health care agencies?	Yes	No
If not, do you plan to develop such a list?	Yes	No
Do you have a printed list or catalog of all health-related magazines, journals, newsletters, etc. which could be made available to other institutions and health care agencies?	Yes	No
If not, do you plan to develop such a list?	Yes	No

*Indicate only those facilities which could be made available for shared usage with advanced scheduling.

Other materials, facilities? Comments:

_____

_____

Has your institution conducted any recent surveys regarding health education manpower needs? Yes No

If so, please attach results.

V. Coordination

List all community agencies, organizations, other institutions, etc. with which your institution has cooperated and/or coordinated in the past year in order to deliver more effective health care education.

Examples: Other colleges, hospitals, industry, public health agencies, mental health programs, nursing homes, rescue squads, local doctors, nurses, etc.

Sample: Coordinated with two other community colleges to put on area-wide seminar on extrication methods for rescue squads.

Name of Organization Coordinated With	For What Purpose

List any other examples of coordination and cooperation with other institutions which in your opinion would make the delivery of health education more efficient and more effective in the 10-county Albemarle area.

_____

_____

List existing sources of funds from which your institution can operate health-related curriculum inservice education and training courses.

_____

_____

PLEASE RETURN BY JANUARY 15, 1973

ALBEMARLE AREA HEALTH EDUCATION SYSTEM

SURVEY OF NEEDS OF HEALTH PROFESSIONALS

NOVEMBER 1972

Dear Dr.

Health professionals and health workers throughout the ten-county Albemarle Area are cooperating with us in an effort to survey current resources, to assess future needs for health manpower, and to determine the kinds of educational programs needed to train present and future manpower. This information will be used by the new Albemarle Area Health Education System to determine its operational priorities for next year.

You can help us by doing two things:

1. Please fill out the brief questionnaire attached and mail it back as soon as possible in the envelope provided.

2. Please distribute the other questionnaires enclosed to the health workers in your employ and encourage those persons to return them promptly.

Your input and that of your employees is vital to the success of this project. We believe an Area Health Education System can improve health care for this entire region.

Sincerely,

Howard Campbell, Chairman
Executive Board, Albemarle Human
Resources Development System

PLEASE RETURN ANY UNUSED HEALTH WORKER QUESTIONNAIRES

ALBEMARLE AREA HEALTH EDUCATION SYSTEM
RESOURCES AND EDUCATIONAL NEEDS SURVEY
OF PROFESSIONALS AND EMPLOYERS OF
HEALTH WORKERS

I. Please provide the following information:

Age: _____

Kind of Practice: _____
(G.P., Dental, Ophthalmology, Pediatrics, etc.)

Patient load: _____
(Number of patients treated during a typical week)

Work time: _____
(Number of hours devoted to professional matters during a typical week)

II. In the spaces below, list the specific education or inservice training needs which apply directly to you. In making this list it may be helpful to think of new areas in your professional life or those areas in which you feel you need updating the most.

_____

_____

_____

_____

_____

_____

_____

_____

III. Please rank the three most important needs in your list above by placing a "1" beside the most important, a "2" beside the next most important, and a "3" beside the third most important.

IV. Please indicate below the job titles of the health workers employed in your office, the number of persons in each title, the presence or absence of a formal inservice training program provided by yourself, and your perception of their greatest need for specific inservice education.

Job Title	Number Employed	Training Program Available		Specific Needs for Education
Example: Medical Receptionist	1	Yes	(No)	Psychology - better techniques for dealing with patients
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	
		Yes	No	

V. In Column A select the five most critical areas of manpower shortage that you believe exist in the Albemarle Area and rank these five areas from 1 (highest) to 5 (lowest).

In Column B select the five position titles which from your experience seem most in need of inservice and continuing education and rank them from 1 to 5 as above.

Position	A Most Critical Manpower Shortage	B Most Critical Inservice and Continuing Education Needs
Ambulance Attendant		
CLA		
Community Services Representatives		
Dietitian, Nutritionist		
Dentist		
EKG Technician		
Executive Housekeeper & Assistants		
Hospital Administration Staff		
Maintenance		
Medical Lab. Technician		
Medical Librarian		
Medical Secretary/Clerk		
Medical Social Worker		
Neighborhood Health Workers		
Nurses: Administrative		
Anesthetist		
Family Nurse Practitioner		
L. P. N.		
Nurse Clinician		
Nursing Assistant		
R. N.		
Occupational Therapist		
Operating Room Technician		
Orderly		
Pharmacist		
Pharmacy Clerk		
Physical Therapist		
Physical Therapist Aides		
Physician Assistant		
Physicians and Surgeons:		
Anesthesiologist		
ENT		
General Family Practice		
General Surgeons		
Internist		
OB/GYN		
Ophthalmologist		
Orthodontist		
Orthopedic Surgeon		
Pathologist		
Pediatrician		
Psychiatrist		
Radiologist		

Position	A Most Critical Manpower Shortage	B Most Critical Inservice and Continuing Education Needs
Other Specialties: Specify		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Recreational Therapist	_____	_____
Respiratory Therapist	_____	_____
X-ray Technician	_____	_____
Ward Clerk	_____	_____
Other Staff: Specify		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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